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Hog Cycles Are Changing

Hog production cycles will become shorter and more erratic as producers become more market conscious, Francis Kutish, farm economist at Iowa State University, said recently.

Kutish points out that hog production used to be affected by hog prices, corn prices and corn supplies. Now with a bulging supply of corn at a relatively stable price of about $1 a bushel, corn has little affect on hog production cycles. This increases the number of ups and downs in hog prices.

An indication of how the low hog prices have kept the hog numbers down appears in the 16 percent reduction in the 1960 spring crop as compared with the spring pig crop of 1959.

This was the sharpest cutback from the peak of a hog cycle since 1944.

The same United States Department of Agriculture survey indicates that the fall pig crop is only about 4 percent smaller than last fall's. Because of the sharp cutback in this year's spring crop, our fall pig crop will set a "record." This will be the only year that the largest share of a year's total hog crop was produced in the fall, said Kutish.

This shift will even out marketings and reduce the seasonal bunchings of market hogs. Kutish also reports that this will put more hogs on the market this winter than in any other winter during the last 10 years. It will also limit the high prices in late winter and spring.

Iowa State University

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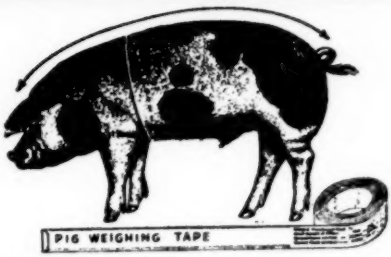


HOG WEIGHING TAPE — New Profit Tool

Use this tape to check weights frequently and make more money from hogs. Get best gains from your feeders and sell at right weight to get top prices. Uses both length and heart-girth measurements. Helps you select meat-type breeding stock. 60" heavy cloth. Money back guarantee. Each $1.59 — 3 for $4.49 — 12 for $16.95. Write: Highsmith Co., Fort Atkinson, Wisconsin.

The Farmer's Digest

Volume 24 November, 1960 Number 5

A Farm Operating Budget: Your Profit Blueprint

A budget is a must for sound money management on the farm. Here's how to make one. . .

Condensed from Successful Farming

A. G. Mueller and *Harold Guither*,
University of Illinois

YOU wouldn't start to build a new barn without a plan. You'd look over several plans and pick the one that fills your needs. You'd have working drawings made to give details of how to build the barn and what materials were to be used in it.

For much the same reason, you need a well-designed plan for setting up a year's farming operations. And you would follow much the same approach as you would for building a barn.

First step: Look at several farm plans and pick one that fits your needs and what you have available. Farm management men call this farm planning or budgeting.

Next step: Work out an *operating budget*—a plan that will show expected income and expenses *month by month* for the coming year. This operating budget is especially helpful in successful money management.

Here are several good reasons why you should have a good operating budget for the farm business, and for family living expenses, too:

1. A budget shows *where* your money will come from and a general idea of *how much*. This information will serve as your guide for spending. It will also help you keep spending in line with expected income.

Reprinted by permission from Successful Farming, Des Moines 3, Iowa

2. A budget shows *when* to expect your income and expenses. It will show when and how much credit may be needed and when repayment can be made.

For example: A central Illinois farmer was taking over a new farm. To set up a livestock plan, he had to invest in stock and feed. With his banker's help, he worked up a month-by-month budget, showing expenses and expected income. This farmer then knew when he would need to borrow money, and when he could expect to repay.

3. A budget makes it possible to arrange for credit in advance, often with better terms. In fact, many farm lenders won't loan money any more unless the borrower has an operating budget.

One farmer we recently heard about didn't take time to plan his credit needs. He borrowed a little here and a little there where he bought farm supplies. Whether he realized it or not, he was often paying a heavy financing charge. When he added up his unpaid bills at the end of the year, they totaled nearly $3,000. The longer he delayed paying them, the higher his interest charges.

Planned borrowing and a definite repayment schedule could have saved this farmer some interest costs and helped him avoid a serious financial problem. With his banker's help, he was able to consolidate his debts and work out a repayment plan. But he caught his financial problem just in time.

4. Budgets help guide family spending. A plan of all expected income and farm operating expenses will show about how much is left for family living, savings, and debt repayment. It will help your family keep living expenses within your means.

5. Operating budgets help a family anticipate the ready cash needed for major expenditures. New cars, tractors, furniture, major vacations, or college educations for children are easier to "come by" if the operating budget includes long-range planning for them.

Setting up a budget. Your farm records, if properly kept, are a big help in budgeting. Along with several sheets of paper and a pencil, they are about all you need to set up your farm and family budget.

● First, look at your farm business and list your sources of income for the year ahead. This should include all crops, livestock, custom work, and any other income. Make an estimate of the amounts you plan to sell and a reasonable market price you might expect.

You can use your last year's crop yields if they seemed about average. If last year was better or

worse than usual, adjust your yields down or up.

● Then take another sheet of paper and set up a column for each month of the year. Put down the amounts of income you figured above in the months you expect to receive it.

● Then with the help of last year's records, put down how much you probably will spend in running the farm during the year. Your last year's tax return will provide a list of expense items and a good idea of your total expenses.

But for budgeting, you'll need to list the expenses in the months they occur. You might buy fertilizer in both spring and fall, seeds in late winter, and fuel each month from spring through fall.

If your farming operation will be about the same in 1961 as this past year, then you can use about the same expense figures. These may need a little changing if you had any unusual expenses that aren't likely to come up again. You'll also want to consider adjusting for price changes on any items.

If you are changing your farming plans in a major way, then you may need to figure carefully and add any new expenses to present costs. You may also see if the change will cut out any spending.

● After estimating farm income and expenses month by month, put in the amount that will be needed to cover family living expenses each month. Be sure to include irregular items like life insurance premiums, and principal and interest on long-term debts.

If you have kept home account records, they will come in handy in checking these estimates.

● Another way to check on money available for family living would be to subtract total farm expenses and irregular items from total estimated income.

For example, suppose your estimated gross income works out to $15,000 and your farm expenses total $9,000 and you have a $2,000 debt to repay. This leaves $4,000 for paying income taxes, saving, and family living. If you have income taxes of $400 and you want to save $600, then you would not plant to spend more than $3,000—or $250 a month—for family living.

Check monthly situation. Add up your income and expenses estimates month by month. Most farms will have some months of high incomes and some months with high expenses. But often they won't come in the same months. Starting with the first month, you can determine the surplus or deficit for each month of the year.

If you don't have cash on hand to handle the short months, you

can arrange for borrowing. Lenders are usually more ready to lend to a farmer who has his budget worked out to show when and for what purposes the money is needed, and where the money will come from to repay a loan.

Budget like a blueprint. A building blueprint prevents costly errors, reduces waste, and speeds up the building job. In much the same way the farm and family budget will perform these same services.

A budget can help prevent overspending. It helps make you more cautious about spending for unplanned items. It will speed up the process of borrowing money when you need it.

At the same time your budget assures the family of a sound spending pattern. You will know that you are living within an amount you can afford.

When expenses exceed income. What do you do if expected income does not cover expected expenses, family living, and debt repayment? This is one of the good reasons to budget!

Check your budget. See if all expenses are necessary. Can you expand output and sales anywhere to boost income? Will spending more money in the right places give you more income? Maybe you can benefit from using more fertilizer or adding to a livestock enterprise.

If none of these methods can help you, then you face two choices. You might decide that your budget reflects some temporary low-price situations that may not carry through after the year ahead.

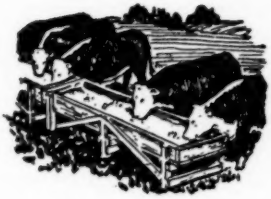
If you have some financial reserve that top money managers plan for, you may be able to get by. You can avoid buying capital items until income picks up. Some call this "living on your depreciation."

Or you may face a more serious problem. Your budget may show that with the present cost-price squeeze in farming your volume of business is no longer adequate for a good family living. You must then either expand your farm business, or look for some outside income.

Before you say it can't be done, make sure you are not standing in the way of the man who is doing it.

Estimating income a year ahead on a farm is not easy. Crop yields and prices are both uncertain. But even if your estimates are not perfect, you will be able to anticipate financial problems before you get into serious difficulty. And chances are that you will be better off than the farmers who make no budget at all.

Beef Performance Testing Is Easy



Are you willing to keep a few simple records to get $35.90 more per calf? . . .

Condensed from The Progressive Farmer

C. S. Hobbs

PERFORMANCE testing is a simple step to making your beef cattle more productive and profitable. Using performance records is as easy as managing a checking account.

To be profitable, beef cattle must have: 1) calves regularly (high percentage calf crop); 2) ability to gain rapidly and efficiently, before and after weaning; 3) desirable type or conformation; and 4) ability to produce desirable calves and carcasses.

Four Records Required

Here are four records that are useful in starting your herd on a performance-testing program:

1. *Identify each cow and estimate her age.* Tattoo each cow in the ear and brand numbers on the left hip. You can use neck chains or a special ear tag that is readable at a distance until the fall branding season.

2. *Identify each calf.* Use a tattoo in the ear of each calf and an ear tag that can be read from a distance. (Some state programs require only one identification for commercial calves—tattoo or ear tag.)

3. *Record the birth date of each calf.* If it is too late to get birth weights, weigh calves when you start testing and at weaning. This will help you pick out the largest calves. Then you can compute their rate of gain from start until weaning.

4. *Weigh and grade calves at weaningtime.* It's best to do this when calves are between 180 to 270 days of age. If you don't have access to a scale, contact your county agent or vo-ag teacher. When you get on your state program, a scale is made available.

Testing Widely Available

Nothing is complicated about performance testing a beef herd. A little planning and effort give you a higher income from beef

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The Progressive Farmer, 821 North Nineteenth Street, Birmingham 2, Alabama

cattle. Most states now have official performance-testing programs. Specialists take figures from the four types of records listed above and they calculate other records. In most cases the following information is calculated:

1. Adjusted average daily gain (the best measure of gaining ability under standard conditions),

2. Weaning selection index (includes adjusted average daily gain and grade).

Average daily gain during the suckling period is a figure that doesn't need adjusting for difference in ages of calves at weaning-time. It is calculated using the following formula:

Win new friends but keep the old . . . the first are silver but the latter gold.

$$\text{Average daily gain} = \frac{\text{Weaning weight} - \text{Birth weight}}{\text{Days of age at weaning}}$$

But adjustments must be made for *sex of calf* and *age of dam*. These affect daily gain from birth to weaning. Steer calves gain 7% faster than heifer calves, and bull calves gain 4% faster than steer calves. Cows 6 to 10 years old produce faster-gaining calves than other cows.

Here are correction factors used in adjusting daily gain for sex of calf and age of dam.

*CORRECTION FACTORS

Age of Dam (Years)	Steer Calves	Heifer Calves	Bull Calves
2	1.15	1.22	1.11
3	1.10	1.17	1.06
4	1.06	1.13	1.02
5	1.03	1.10	0.99
6 to 10	1.00	1.07	0.96
11	1.02	1.09	0.98
12	1.05	1.12	1.01
13	1.08	1.15	1.04

*Multiply daily gain by appropriate factor to get mature dam-steer equivalent.

(Some states also make an adjustment for season of the year.)

Figuring The Results

Some cattlemen using this program have increased the rate of gain of suckling calves from 1.5 pounds per day to 1.9 pounds per day. This is about a 27% increase. The grade has been raised from Good to Choice. How many dollars per head increase is this?

Assuming that the average calf is weaned at 230 days of age: For the calf gaining 1.5 pounds per day and grading Good, let's use a selling price of $28 per cwt. Thus the dollar return would be:

230 days of age × 1.5 pounds per day = 345 pounds. Adding 70 pounds for birth weight, we get 345 + 70 = 415 pounds. 415 pounds weaning weight × $28 per cwt. = $116.20.

For the calf gaining 1.9 pounds per day and grading Choice, let's use a selling price of $30 per cwt. Thus the dollar return would be:

230 days of age × 1.9 pounds

per day = 437 pounds. Adding birth weight of 70 pounds, we get 437 + 70 = 507 pounds.
507 pounds weaning weight × $30 per cwt. = $152.10.

Performance testing in this herd *increased the average return per calf at weaning by $35.90, or 30%.*

Do you want to increase your dollar return by 30%? Are you willing to keep a few simple records to get $35.90 more per calf? Then combine performance testing with a good pasture and feeding program. This will help you produce calves weighing over 500 pounds and grading Choice at weaning.

When God made the oyster, He guaranteed him economic and social security. He built the oyster a house, a shell to protect him from his enemies. When hungry, the oyster simply opens its shell, and food rushes in for him.

But when God made the Eagle, He said, "The blue sky is the limit, go build your own house." And the Eagle built on the highest mountain crag where storms threaten him every day. For food, he flies through miles of rain and snow and wind.

The Eagle, and not the oyster, is the emblem of America.

The Texas Future Farmer

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC. REQUIRED BY THE ACTS OF CONGRESS OF AUG. 24, 1912, AND MARCH 3, 1933, AND JULY 2, 1946, of the Farmer's Digest, published 10 issues a year at Fort Atkinson, Wis., for November 1, 1960

State of Wisconsin
County of Jefferson
SS

Before me, a Notary Public in and for the State and County aforesaid, personally appeared Hugh Highsmith, who being duly sworn according to law, desposes and says that he is the publisher of the Farmer's Digest and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, as amended by the Act of March 3, 1933, and July 2, 1946, embodied in section 537, Postal Laws and Regulations, to wit:

1. That the names and addresses of the publisher and digest editor are: Publisher and editor, Hugh Highsmith, Fort Atkinson, Wisconsin.

2. That the owners are: The Highsmith Co., Inc., Fort Atkinson, Wisconsin; Hugh Highsmith Fort Atkinson, Wisconsin.

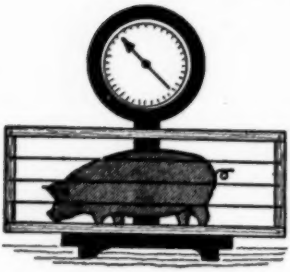
3. That the known bondholders, mortgagees and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages or other securities are: None.

Signed, Hugh Highsmith, Publisher.

Don Wittenwyler, Notary Public. (My commission expires October 6, 1963.)

Sworn to and subscribed before me this 30th day of October, 1960. (Seal).

Which Hog System Is The Most Profitable?



A hog farmer looks at the advantages and disadvantages of both Central and Farm systems of swine production . . .

Condensed from Breeder's Gazette

Edgar Urevig, Lewisville, Minnesota

THERE are two general systems in hog raising.

One can be called the farm system, which would include any system that fits the need of the general farmer raising hogs. The other might be called the central hog system. This is a system that is designed for large-scale hog production. It is operated with specialized management and will produce and market from perhaps 2,500 to 15,000 or more hogs a year.

We have been operating a central system since 1956 which produces between 4,000 and 5,000 hogs yearly. We also operate a number of farms that are leased to operators on a 50-50 livestock basis and they produce approximately 4,000 hogs yearly. This has given us an opportunity to analyze both systems.

Farm System

Now, let us look at what it costs to raise hogs under the so-called farm system. The farm system will maintain a certain number of sows, depending on the size of the system. Whatever the size of the sow herd— the replacement gilts, depreciation on boars, and death loss can generally be maintained by the sale of cull sows on the market. This is not always true, but let us assume it to be correct.

It costs approximately $75 to feed the average sow for one year. It is theoretically possible for each sow to farrow two and one-half times a year. Based on a conception of 70 per cent, which we find to be about average taking into account all conditions, each sow will farrow an average of one and three-fourths times a year. Assum-

Reprinted by permission from Breeder's Gazette, Columbia, Missouri

ing further to sell eight pigs per sow farrowed, or a total of 14 pigs marketed per sow kept per year. In other words, it would be the same as maintaining an average of 25 sows and breeding 25 for spring farrow, breeding back for fall farrow and marketing 350 pigs. I am referring now to sows kept for breeding, not sows farrowed. On this basis, the day the baby pig is born he has a charge against him of $5.36 of his mother's feed. If hogs are marketed at 200 pounds the sow feed cost charged against each pig would be $2.68 a cwt. I am surprised to note how many production cost figures do not include the sow feed in the cost to produce 100 pounds of pork.

If some people would scratch for success and happiness the way they itch for an easy time, they could reach the point where they wouldn't have to do either.

Pig starter feeds will cost approximately $1.70 per pig to 30 pounds, or a cost of 85c a cwt. In an efficient program 170 pounds of gain from 30 pounds to 200 pounds should cost around 9c a pound. Add $2.68 plus 85c plus $9.00 and we now have a feed cost of $12.53 a cwt., but there are other costs:

Depreciation on buildings and equipment	$ .60 per cwt.
Fuel and lights	.25 per cwt.
Straw and bedding	.05 per cwt.
Disinfectant	.03 per cwt.
Vet supplies and iron injection	.50 per cwt.
Insurance and taxes	.09 per cwt.
Well repair and maintenance	.01 per cwt.
Miscellaneous, tools, fly spray, etc.	.17 per cwt.
TOTAL	$1.70 per cwt.

Adding $1.70 to the feed cost of $12.53 we have a total of $14.23 per cwt., but we have not included labor. It takes from 3 to 5 hours of labor for the complete process of raising one hog to market. Let us assume an hourly wage of 75 cents, and using an average of 4 hours labor makes a total labor cost of $1.50 per cwt. Our total cost is now $15.73 to produce 100 lbs. of pork.

Surprised? I am sure many of you feel certain it doesn't cost 15 cents to produce a pound of pork. I will agree there are exceptions, but I would suggest that each of you that do not know what all your costs are, make a careful check—and don't forget to make a fair building charge. It costs over 10 per cent a year to own the average livestock building. You will note there is no charge for tractor and spreader and manure handling equipment. We assume the manure value would offset this charge.

After the above charges are

made we get market price for the grain, 75 cents for our labor, and normal depreciation on buildings and equipment. Too often these costs are subsidized by some other farm enterprise—generally the crop end. The figures I have used are based on a relatively efficient operation—about what you can expect to find in the upper one-third of the hog farmers today.

We have been keeping income per acre figures to determine actually what we are receiving per bushel for corn fed to hogs and other livestock. I am certainly not proud of the figures I am about to give you.

For the years 1955, '56, '57 and '58 the average income per acre for corn fed for our top operators —from which have been subtracted the costs outlined above, such as depreciation and all other costs—we have an income of $124.30 per acre; and for the low operators for the same period an income of $35.57 per acre. The average corn yield was 79 bushels for the four-year period for the top operators and 69 bushels for the low farms. This is a gross return of $1.57 a bushel of corn fed for the top men and .52 cents a bushel for the low farms. The facilities in general were quite similar. This is a unique demonstration of the effect of management skill in directing the hog operation. Management is largely the key. Without management, resources of production remain as resources and never become production. In the complex hog business the quality and performance of management will determine its success or failure. Regardless of the quality of breeding stock, feed, buildings, or equipment you may have, it is of little value if you lack the management to put it into production, as the above figures so ably demonstrate.

Central System

Strange as it may seem, there isn't a great deal of difference between the two systems in cost other than feed. The individual costs differ, but the over-all end

Composition of farm debt has changed markedly in the past 2 decades. The non-real estate portion of the debt increased from less than one third of the total debt in 1940 to nearly one half in 1959.

cost is about the same. This you understand, does not include feed. You do, of course, have the advantage in the central system of getting a volume of hogs and that their feed efficiency is relatively high. It compares quite favorably with what you would expect to find in the upper one-third of the hog farmers today. However, problems are intensified with vol-

ume. Sanitation becomes more important. Any time large numbers of hogs are concentrated in a given area you are vulnerable to disease loss. The system requires good equipment.

I believe you can understand the problem of breeding, feeding and managing a sow pool of over 300 head. We confine our sows on the circular slab of cement. There is now a great deal of discussion as to the confinement of sows on cement. It would seem reasonable that having sows in lots would be less costly, but this is not true in our case. Depreciation on our sow quarters is a little under $400 a year. In contrast, the five acres of land that would be required to lot a like number of sows, taking into account the earning potential of this land and the maintenance of fences and waterers would run just under $400 a year.

Keep your face to the sunshine and you cannot see the shadow.

I am assuming the cost of shelter in each case would be about the same. There are advantages in keeping sows in confinement on cement. One of the important reasons is the sows are always in the groups in which they are placed.

The central system has many problems. If you schedule your farrowing for 105-day periods it is essential to keep the farrowing house full throughout this period. This means that the day six sows farrow you have to have six litters that are three weeks of age ready to be moved into the nursery. You can readily understand how exacting your breeding and management program must be. If your farrowing house is only partially filled during this period your depreciation, heat, light, and labor costs increase out of proportion. The buildings must be operated at maximum capacity.

There is the problem of determining how far you can go on laborsaving equipment. It is easy to reach a point where the depreciation schedule on labor-saving equipment is greater than the cost to have the job done with hired labor. I note that in spite of the fact that we have a number of labor-saving devices in our central system the labor input is about the same per pound of pork produced as under the farm system.

Feed wastage, although it is not singular to either system, is very high and I wish to comment briefly. On a check taken some time ago we found that our feed wastage was over $2 per hog finished. I know you are going to

say that yours isn't nearly that high.

Is the Farm System Doomed?

I would predict that the central system will continue to grow because of the nature of its business. It is highly specialized and the management of your central system has the ability to employ the best in research in breeding, nutrition, economics, management and environmental control. At the present time the central systems are producing from 3 to 5 per cent of the hogs in the country. They were almost nonexistent five years ago. The central system will be very competitive with the hog producer in the bottom two-thirds of the efficiency ladder and very likely the hog producer in the bottom two-thirds of the efficiency ladder at the present time will be out of the hog business in the foreseeable future. I would predict that the hogs of the future will be produced by the central systems which will grow in number; but the central system will not put the good hog producer—the person now in the upper one-third group—out of business.

How To Fail In The Hog Business

Dr. G. B. Phillips, Alabama hog marketing specialist, has outlined a sure way to fail in the purebred hog business. His plan follows:

"You must work hard to fail. If you want to end up broke quick, just keep raising the same old kind of hogs. Never go to see other bloodlines. Don't ever castrate boars. Sell them for breeding purposes!

"Burn out your bred sows on corn. Get 'em fat. Small litters of knotty pigs will help avoid the trouble of making many sales.

"Don't promote or advertise. Anybody who wants to buy a boar or gilt should know you're in the business and should look you up. Be careless about bringing diseased or exposed animals on your farm. Allowing neighbors to breed their sows to your boar may infect your entire herd with brucellosis, but that'll only put you out of business sooner.

"When you sell an animal and promise registration papers, don't supply them. Let your customer sweat and fume. He'll tell his neighbors, and they won't bother you with inquiries. Don't participate in a brucellosis blood testing program. Your neighbors might want to buy your boars and gilts if they were disease free.

"Don't figure out the several dozen other ways to lose money raising purebred hogs. If the ones listed above apply, you won't be in the hog business long anyway!" *The Berkshire News*

Conventional Dairying vs. Cow Factories

This New Jersey dairyman finds buying all his feed makes him more money . . .

Condensed from Business Farming

Calvin G. Wettestein

WHICH is better for the dairyman — a conventional farm management program or a cow-factory setup where milkers are fed dry-lot fashion?

Ask Harry Simpson, of Sussex County, New Jersey, and he'll tell you the latter type operation has made him more money.

This milk producer who has farmed for 53 years — and his father for many years before that — is in a position to know, too, for he has conducted comparison tests of these two management systems on his farm during the past two years.

Because of mounting land taxes and the high cost of farm equipment, this dairyman decided to find out whether he should continue with his conventional-type operation or switch to a cow-factory arrangement. So, back in 1958, he split his 70-cow herd into two units and put them into separate dairy barns.

One group of 30 was fed hay, silage and pasture grown on the 174-acre farm, of which about 85 are tillable. Grain was purchased, as had been the practice in the past.

The other 40 cows were quartered in a barn on a two-acre lot. They were fed in dry lot, with all the hay, bedding and grain purchased. Beet pulp and dried brewers' grains were used to replace the silage. Only a small part of the lot was used as an exercise area.

Both herds were continued on DHIA testing, though they were tested as one unit, and a separate cost accounting system was established for the 40-cow herd.

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After a full year under this split operation, the accountant who helps Simpson with his books reported a decided advantage for the dry-lot feeding setup, where all the feed was purchased.

Listed in Table I below are 1958 income and cost figures summarized for the 40-cow dry-lot unit.

We attempted to break down some of the expense figures on the 40-cow operation. It was determined that the close to $8,000 feed bill consisted of the following:

Beet pulp-apple pomace	$ 1,008.85
Dried brewers' grains	1,081.10
16% formula feed	3,734.49
	$ 5,824.44
Hay purchased	2,159.91
Total feed expense	$ 7,984.35

TABLE I

INCOME	
Milk	$20,399.90
Calves sold	700.00
	$21,099.90
EXPENSES	
Feed and hay	$ 7,984.35
Labor	3,000.00
Taxes, insurance, repairs, vet., breeding, etc.	2,542.48
Depreciation (12%) on cows	2,410.00
	$15,936.83
NET INCOME	$ 5,163.07

During the same period, Simpson realized a $2,500 net income on the conventionally fed, 30-cow unit.

Simpson's hay was purchased mostly from dealers and was good to above average in quality. One of the real advantages of purchasing hay which he points out is that he can order the quality he wants. On the standard operation, if hay was cut down and rained on, he had to feed it, but in purchasing hay, he could set his own quality standards.

The labor charge of $3,000 was set on both the 40 and 30-cow operations. Simpson feels, however, that the division was not 50-50. The man in the 40-cow unit, especially in spring, summer and fall, spent some time working in the fields producing roughage for the conventionally managed unit.

Snow Plowing, Too!

The miscellaneous item of over $2,500 on the expense list of the 40-cow unit included items such as taxes, insurance on buildings and cattle, repairs on truck, milking machines and the cooler. It included veterinarian fees and those for the milk tester and the artificial breeding service. The barn was painted during the year, and this charge was included. He even listed $20 for snow plowing.

The Simpson herd has been on test since the early days of DHIA testing in the County. The herd, made up mostly of Holsteins, cur-

rently averages about 11,000 pounds milk per cow.

Has there been any noticeable difference between the two units in the tendency for a slump, productionwise, during the hot summer months? Simpson says no. The 40-cow herd on hay, brewers' grains, beet pulp and concentrates reacted to hot spells about the same as the pasture and grain-fed cows.

During 1958, Simpson made only the changes in cattle that would be normally necessary. The dry cows stayed in both herds; no new fresh milkers were brought into either unit to replace dry ones.

How about 1959? Simpson says the pattern was still there — in favor of the dry-lot, "buy all feed" unit. He did not separate his operation and costs as much in 1959 as he had done in 1958, however.

He also stresses that the net income reported on his 40-cow operation in 1958 could have looked even better, but, as he put it, he "hit it hard" in allocating costs to the dry-lot unit.

More Cows on Less Land

In general, he is most enthusiastic about the project and the dry-lot type of management. Cows can get the best of care under this set-up, he says, and would not be subject to conflicts in field work. He feels that this type of operation may well be the answer for the family-sized dairy farm in New Jersey, in light of the continued high land taxes, rising land values and high labor and equipment costs. More cows can be better cared for, and on less land.

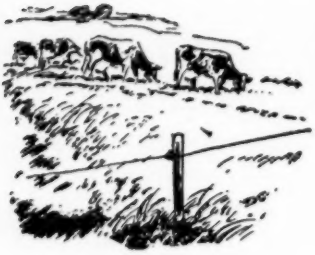
He does point to two possible drawbacks, however. One is manure disposal. If operating on a few acres, the removal of manure might well become a serious problem unless arrangements can be made to sell it as is or dry it and process it for sale.

Although birch bark was traditionally used for Indian canoes, some tribes preferred using strips of fir bark sewed together with fiber and with the seams sealed with fir pitch.

The other limitation, Simpson points out, is that a dairyman "must have the money to buy the right kind of hay and feed when it is available — he can't go into this with an empty pocketbook."

Pregnant ewes may abort during the last month before lambing if fed too much silage. It is advisable to use not over two or three pounds of silage per ewe per day during this period; plenty of good hay and a little grain with it.

Are You Getting The Most From Your Grassland?



Some farmers aren't! It takes more skill and knowledge than other types of farming . . .

Condensed from
The National Future Farmer

Horace McQueen

DO YOU FIT grassland farming into your operation?

On many farms, it provides a major source of income and could increase your profits. But whether your grass is used for livestock production, conservation, or a cash crop, good management will bring greater returns.

Growing *good* grass is no simple task. For success in grassland farming, the same basic principles and practices that are used with your other crops and livestock must be applied.

For Feed

Our grasslands provide the major raw materials in the form of hay, pasture, or silage for the production of meat and dairy products, wool, and mohair. Dairy cattle may obtain 70 percent or more of their nutrient requirements from forage; beef cattle, 75 to 80 percent; and sheep, 90 percent. Even higher proportions of feed nutrients may be secured from forage if desired.

Good forage crops have a high productive capacity. On good corn land, they can produce as much total digestible nutrients as is found in 100 bushels of corn. On poorer soils, forages will outyield corn and other grain crops. Whatever your location, you have a wide selection of forage crops to choose from.

For Conservation

You must include adequate amounts of grasses and legumes in crop rotation systems to maintain the organic matter content in the soil. Grass is also effective in holding water runoff and soil erosion to very low losses.

For example, in Missouri research has shown that on land where corn alone is grown it would take only 56 years to lose

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seven inches of topsoil. When a corn, wheat, clover rotation is used, it would take 437 years. Where grass alone is used, without any cultivation, it would take 3,500 years to lose seven inches of topsoil—showing the value of grass as an erosion control.

Wise land use is one of the important parts of grassland farming. Under this system, the land is put to the use to which it is best suited and which will—over a period of time—prove the most profitable for you. The most productive and least apt to erode land is used for row and grain crops and rotated with grasses and legumes. Rolling land is kept in grasses and legumes as long as possible between cultivated crops. Steep hillsides are kept in grass all the time—maintaining high forage yields by reseeding, fertilization, etc., at regular intervals. The steepest slopes are fenced, cattle kept out, and the trees maintained permanently—thereby decreasing erosion and providing a good watershed.

For a Cash Crop

Many farmers who practice grassland farming sell seed. In most cases, the sale of seed from a good stand of certain grasses provides a good source of additional income. In some areas, there is a good market for hay.

In grassland farming, you are shooting for large yields of high quality forage. To accomplish this, plant food must be supplied in abundance, according to the requirements of the grass you use and the ability of your particular soil to supply the nutrients. For example: In New Jersey, when 25 pounds of nitrogen per acre were applied, timothy hay yielded 3,400 pounds per acre. Untreated timothy on nearby land yielded only 1,780 pounds.

It has been proven that $1 invested in fertilizer will usually bring a return of $5 to $9, depending on the pasture crop on which it is used. Therefore, fertilizing pastures is an investment—not just an expense item.

Nothing cooks a man's goose faster than a red hot temper.

Knowledge, like timber, is best when well seasoned.

Careful management of your livestock is another way to make grassland farming yield better profits. Culling low producers while upgrading your herd, disease and insect control, plenty of fresh water, good shade, easy access to salt, and gentle treatment increase your returns.

Grassland farming is not a simple, easy type of farming. It takes more skill and knowledge than most other types of farming. To be successful in grassland farm-

ing, you must manage both your livestock and forage crops with equal skill.

Before entering into a grassland farming program, plan your operation. Grassland farming is made up of many "links," and they must all be strong if your program is to succeed. As with many other farm enterprises, it is better to grow into grassland farming.

Keep Feed Costs Down For Stock

Keeping feed costs down on a livestock farm is essential in holding down the cost of production, says R. Lee Chambliss, Jr., Virginia Polytechnic Institute agricultural economist. Two of the best ways to do this, he says, are to find cheaper means of handling feed, and to substitute a cheaper feed ingredient for a more expensive one.

Often mechanized handling of feed reduces cost of handling. The farmer must be sure, though, that he is not adding more to machine costs than he is subtracting from labor costs.

Animals can produce meat, milk, eggs, etc. on a wide variety of feeds. For instance, 100 pounds of gain on choice yearling feeder steers may be had by feeding 400 pounds of hay and 953 pounds of grain. It may be made also with 1400 pounds of hay and 654 pounds of grain, or any number of other combinations.

The farmer needs to use that combination of hay and grain which costs the least and will give the most economical production of 100 pounds of gain on the animal. Feed prices vary considerably over short periods of time.

In figuring relative costs of different feeds, it should be remembered that feeding value is not constant on a per-pound basis. It takes two bushels of oats to replace one bushel of corn in feeding cattle. So, the farmer could pay twice as much per bushel of corn as for oats.

If the farmer will convert all his grains to pounds, using 32 pounds per bushel for oats, 48 pounds per bushel for barley, and 56 pounds per bushel for corn—and express the price on a per-pound basis, then he can directly compare costs of one grain with another.

If one has greater feeding value, then this must be taken into account when making per-pound price comparisons.

Virginia Polytechnic Institute

It's Time To Ditch Old Feeding Ratios!

Old methods are inaccurate and money-losing. First learn what your hay is worth . . .

Condensed from Farm Journal

Bill Griffith, Virginia Polytechnic Institute

FEEDING dairy cows according to a pat ratio of one pound of grain to every three or four pounds of milk produced is as out of date as a cow that produces only 5,000 pounds of milk a year.

Ration feeding served as a simple rule of thumb for many years. But in today's tight-margin dairying, it's inaccurate and a money-losing proposition.

It fails to make the most economical use of your feed because it assumes that all of the milk a cow produces comes from grain. It doesn't consider how good or bad your forage is, and how much you're getting into her.

It credits forage with supporting her growth, maintaining her body weight and developing her calf, but overlooks milk-making.

With dariymen switching to more drylot feeding, and pouring more combinations of green chop, silage and hay into cows every day of the year, it's time for smarter figuring.

Standard milk-grain ratios which disregard the kind and amount of forage usually make you over-feed the low producer and under-feed the high producer. That costs you money on both!

Take the needs of an average Holstein giving 3.5% milk: On good forage, she'll probably give 20 pounds of milk a day, with no grain. On poor forage she might give six. Grain has to make up the difference—but not on a straight 1 to 4 ratio.

A cow milking 40 lbs. a day on good forage might use 9 lbs. of grain; on poor forage she could use 15, economically. A straight ratio wouldn't get you top profit from her. A cow producing 70 lbs. a day, with good forage, would need about 22 lbs. of grain. She'd need 27 lbs. on poor for-

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age.

It all adds up to this: For a low-producing cow on good forage, a 1 to 2 ratio would be correct. But in the same herd, you could make money feeding a high-producing cow at a 1 to 2.5 ratio!

The day is about over when you ask a dairyman whether he tests and keeps production records, or even whether he's making any money. You can tell by the way he figures his feeding.

If he's figuring grain according to both the forage he's giving his cows, and the milk they're giving him, you can bet that he's doing his figuring from a good set of records.

There has been a "big boom" in forage testing. The day is about over, too, when dairymen guess at forage quality. Farmers are swamping labs in several states with samples of their hay and silage—some at $5 per sample. With a chemical analysis report on the forage's feed value, they're able to fit their grain feeding to both the forage and the cow.

Cow Eats 350 Lbs. Grass Daily

The top limits of a good cow's appetite, like the valleys on the moon, have never been reached.

As evidence, Holstein breeders the country over are currently pointing with pride to a cow named Ohio Ex Warden Marcella 3567144. She stowed away a phenomenal 350 lbs. of freshly-chopped alfalfa-brome grass in feeding trials at the Wooster, Ohio, Agricultural Experiment Station.

Professor Avery D. Pratt, one of the scientists in charge of the project, reports that the seven year old registered Holstein was fed no grain and no supplemental roughage during the experiment.

Despite its lush bulk, the 350 lb. daily diet contained only 39 lbs. of dry matter. Yet "Marcella" averaged 53 lbs. of milk a day. She did it, in finest dairy cow tradition, by literally milking the beef off her back.

All told, the Ohio Holstein has produced 10,807 lbs. of milk and 427 lbs. of butterfat with more than 100 days to go in her current lactation. In four previous lactations, she averaged 15,507 lbs. of milk and 544 lbs. of butterfat.

The "green-chop" ration was a part of research work comparing the feeding value of silage and soilage.

The Holstein-Friesian Association of America

How Do You Stack Up On Livestock Profits?

Are you doing as well as your neighbors? Use these figures to compare . . .

Condensed from Prairie Farmer

A. G. Mueller and *D. F. Wilken,*
University of Illinois

FOR the past few years, the profit margin in most livestock enterprises has varied over a wide range. With increased farm operating costs, livestock farmers have had to improve livestock efficiency and increase volume of business to obtain reasonable family income.

Returns per $100 of feed fed is the figure used in this article to measure changes in livestock returns. This figure is a ratio of returns for each $100 feed cost and indicates the margin available to pay for labor, equipment, supplies and a profit, if any exists.

Just because the return figure is above $100 does not mean there is a margin of profit. And because dairy herds have the highest return does not mean dairy is the most profitable. The labor and equipment costs associated with each $100 of feed are high for dairy and poultry. They are lower for hogs, beef cattle, and sheep.

Hog returns nose-dived from $180 return for every $100 of feed fed in 1958 to $114 in 1959. The previous low year was $109 in 1955.

Returns varied between farms, however. The higher earning farms last year returned $130 to $149 for each $100 feed fed. But the low return farms obtained only $80 to $99. Feed costs, litter size and death losses explain most of the differences between the high and low earning farms.

A group of 99 high return hog farms averaged $9.13 feed cost per hundred pounds of pork sold. They weaned 7.5 pigs per litter, lost only nine pigs after weaning and averaged $14.13 for all the hogs sold.

A group of 128 low earning farms averaged $11.61 feed costs per hundred pounds of pork produced, weaned only 6.6 pigs per litter and lost 16 pigs after weaning. They also averaged $13.67 for all hogs sold—46 cents a hun-

Reprinted by permission from Prairie Farmer, 1230 Washington Boulevard, Chicago 7, Illinois

dred pounds less than the high earning farms.

Hog enterprises are getting larger. Since 1954-56, the average number of litters per farm has climbed from 40 to 51 in 1959. Farmers seem to be making a little progress in producing 100 pounds of pork with less concentrates. At the same time, they are buying a higher proportion of the concentrates being fed.

Since 1950, the average size of flocks has jumped from 221 to 513 hens. At the same time, the number of farms raising poultry has declined. Annual production per hen has climbed from 177 to 210 eggs.

With the shift to more of the light breeds and high laying rate, poultrymen have reduced the amount of feed to produce a dozen eggs or equivalent amount of meat from 7.9 pounds in 1950 to 6.2 pounds in 1959.

Large flocks produce more eggs per bird at lower feed costs. Last year a group of 49 flocks averaging 1,800 birds produced 215 eggs per hen. A group of 184 flocks averaging 191 hens produced only 190 eggs per hen. The large flocks averaged 18 cents a dozen feed cost, while the small flocks averaged 21 cents a dozen. The large flock owners also sold their eggs for two cents a dozen more.

Since 1954 the average size dairy herd has increased from 21 to almost 28 cows. Milk production per cow averaged 9,884 pounds—an increase of more than 1,000 pounds in five years.

Milk prices have been more stable than other farm commodities in recent years. Last year, record-keeping farmers averaged $3.52 a hundred pounds net at the farm. During the past six years, prices have ranged from $3.50 to $3.72 a hundred pounds.

Beef cow herds averaged $147 return for every $100 of feed in 1959. This was down from $162

Returns Per $100 Worth of Feed Fed to Different Classes of Livestock

Year	Beef Cow Herds	Dairy Cow Herds	Feeder Cattle Bought	Native Sheep Raised	Hogs	Poultry
1950	169	173	170	177	152	122
1951	170	187	142	171	127	137
1952	99	175	86	67	116	116
1953	64	147	81	84	178	148
1954	95	141	126	97	154	104
1955	94	168	106	103	109	142
1956	103	177	117	137	142	133
1957	134	189	143	138	172	136
1958	162	199	144	98	180	142
1959	147	191	112	102	114	135

in 1958 but above the 10-year average of $124. From 1952 to 1955, beef herds returned less than $100 for every $100 of feed fed.

Although some herd owners sell calves as feeder cattle, the majority sell the animals they raise at slaughter weights.

Feed costs per hundred pounds of beef produced averaged $16.08 while the price received for all production sold averaged $24.72.

High prices for replacement cattle reduced the profits in cattle feeding during the 1958-59 feeding year. On the other hand, feed costs were lower and feeding margins were larger than normal. Heavy and short fed cattle sold in April and May 1959 made the highest returns.

Farmers who kept accurate records averaged $112 return per $100 of feed fed for all feeder cattle operations during 1959. They made $144 return in 1958. Prices received averaged $26.38 in 1959.

Native sheep flock owners were able to get only about the value of the feed back from their flocks in 1959. On 151 farms averaging 35 ewes, the sheep returned $556 and had feed costs of $545. This was an average return of only $102 for each $100 of feed fed.

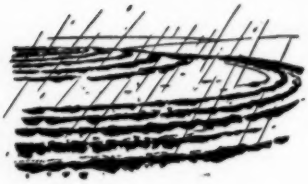
A Farm Manager's Advice on Fertilizer

Plow down fertilizer this fall. Or next spring, plan to use a starter and anhydrous or liquid. This is now a must for all bean stubble or corn stalk ground going back to corn next year. So, before you fall plow, a plow-down fertilizer must be applied or, as stated, plan to use starter and anhydrous or liquid knifed in next spring. All forms are good and costs are very similar, if a good job of applying is done for each kind used.

Plan to use at least 80-40-40 (about $15 an acre) and try an area or two of 120-40-40 (about $20 an acre). New hybrids respond extra well to nitrogen and are proving profitable to grow on up to 120 pounds of actual nitrogen per acre. Frankly, we favor just a little, the dry fertilizer plowed down in either fall or spring. It can be done for sure, but does tie up money longer. Anhydrous or liquid can be just as good — if applied correctly and — if applied. A wet spring and wet, early summer can prevent application. But if done and done properly, it does have the advantage of using your money less time.

Jesse Dowell, Accedited Farm Manager, Champaign, Illinois

It Pays To Buy Good Drain Tile



Study soundness, shape, strength, and density before you invest . . .

Condensed from The Ohio Farmer

Melvin L. Palmer, Ohio Extension Agricultural Engineer

MILLIONS of acres of farmland require artificial drainage, and a tremendous investment is needed each year to tile it.

Farm drainage systems require good drain tile for trouble-free performance and long life. Failure of a single tile can stop a tile line or even a whole drainage system from operating. Repair work is often costly, and a crop may be damaged by excess water before repairs can be made.

About half the cost of a tile drainage system is in the tile themselves. Tile are a long-term investment and they should be selected on the basis of high quality. The saving of a few dollars to buy low-quality drain tile is false economy, since they will break down in a short time and need replacement.

What should you look for when buying drain tile? First of all, select a manufacturer who has a reputation for turning out a high-quality product. It would be wise to check with a few people who have bought tile from this plant to see if they are satisfied customers. You may be investing well over 100 dollars an acre in your tile system, and this warrants some investigation of the tile as well as the contractor.

When you have selected a manufacturer, insist on his guarantee that the tile meet the specifications of the American Society for Testing Materials (ASTM). This guarantee is a necessity if you receive cost-sharing through the agricultural conservation program, but it is good insurance anyway.

What is meant by ASTM specifications? Here are four main factors that determine tile quality, regardless of whether the tile are made from shale, surface clay or concrete. These are soundness, shape, strength and density. You can check soundness and shape by visual inspection, but strength

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and density can be determined accurately only in the laboratory with proper testing equipment.

SOUNDNESS: Sound tile give a clear ring when tapped with a light hammer. They have no cracks or checks to weaken them. Sound clay or shale tile are free from lime spots and pebbles. Sound concrete tile contain well-graded aggregates and are smooth on the inside.

SHAPE: Well-shaped tile are straight lengthwise and have round, square-cut ends. The tile are uniform in size. Shape is important for proper alignment and fit of the tile ends in the trench.

STRENGTH: Strong tile give a clear ring when tapped with a light hammer, but this test and visual inspection give only a rough indication of strength. The proper strength test consists of crushing the tile in a hydraulic press. Tile must be strong to withstand the weight of earth loads and of heavy farm equipment crossing the lines.

DENSITY: This is one of the best indicators of tile durability. The more dense the tile, the better they will resist frost action and soil acids. Porous clay tile are subject to frost damage where exposed on the ground surface or at outlets. Porous concrete tile are subject to damage from soil acids, especially in peat and muck.

An absorption test is the standard method of determining density. The broken pieces of tile from the strength test are dried thoroughly, then boiled for five hours to determine the amount of water absorption. A rough estimate of absorption can be made by immersing a dry piece of tile in a bucket of water. If it bubbles vigorously it is porous and has high absorption. If it bubbles only occasionally, or not at all, it is probably dense and has low absorption.

There are ASTM specifications for several classes of both clay and concrete tile. The Standard-Quality class is satisfactory for most farm drainage work, but

Strauss has it over Presley when it comes to stimulating milk production. Utah dairy farmers used Rock and Roll records for encouragement but found the "crazy" music tightened the cow's glandular systems and hindered milking. They changed to waltz-time with much better results.

Butter-Fat

Extra-Quality is better. Some tile manufacturers sell only Extra-Quality tile that have a minimum average crushing strength of 1100 pounds per linear foot, for diameters up to 12 inches. Additional

details may be available from your County Agent or vo-ag teacher.

Drain tile require proper care and handling, even though they meet ASTM specifications. Each tile should be inspected for soundness and shape before installation. Poor tile should be discarded. It is not practical for a manufacturer to test every tile, so a few poor ones may turn up. He will usually replace these with good ones, or allow a few extra on the load to take care of defects.

Good drain tile are a sound investment, even if they cost a little more. With proper care and proper installation they should last 100 years or more.

Research Shows No Advantage For Low-Level Feeding Antibiotics To Dairy Cows

What about routine low-level feeding of antibiotics to dairy herds? This question is being asked by dairymen, says A. M. Meekma, extension dairy husbandman, at Texas A & M College.

In answer, Meekma points out that the Food and Drug Administration okayed the feeding of aureomycin to dairy cattle at the level of O.1 milligram daily per pound of body weight. The clearance merely stated, says Meekma, that if aureomycin were fed at the recommended level, no antibiotic would carry through to the milk.

Dairymen are also debating the merits of routine low-level antibiotic feeding. As a possible guide, Meekma cites research recently conducted by the Tennessee Agricultural Experiment Station. This research, says Meekma, found no detrimental effects, but neither did it note any advantages in milk production. Likewise, there was no significant differences between the controls and the antibiotic-fed animals in resistance to mastitis, foot rot or other bacterial infections. Body weight changes were not affected, either.

Meekma points out, however, that the negative results might possibly reflect the excellent management and low incidence of disease typical of this herd. Where management is not so good, and where disease is ordinarily a problem, the results might differ.

The specialist concludes that under conditions of good management, feeding aureomycin to milking cows apparently has no advantages. On the contrary, he says, the dairyman may run the risk of having his milk condemned because of faulty feed mixing, he may cause the creation of antibody resistant disease organisms in his herd, and he will certainly raise his feed costs. *Texas A & M College*

Are We Headed For Corporation Farming?

Some people say farming may be at the stage industry was before corporate organization developed.

Condensed from Better Farming Methods

Mervin G. Smith and *Ray A. Bailey,*
Ohio State University

• ARE WE ON the threshold of another great change in agriculture?

Is the organization and financing of agriculture just beginning to change to something quite drastically different?

Some people say that the organization and financing of farm production may be at the stage that industry was before we started to work out the structure of corporations some 100 or so years ago.

We are not sure just where this change is taking us, but many people think that it will become more and more like the corporation in industry. This would be in respect to the size of the business, the organization of it (as far as management and other specialized skills are concerned), and the dividing up of the ownership by issuing stock, and the paying of returns in the form of dividends.

On the other hand, many people would say, also, that this can never happen in farming; that farming is quite different. The farm is built around the family organization. They're almost one and the same. Also, the farms occupy so much space. They're scattered all over the United States. And that too much is lost in the way of efficiency in trying to organize extremely large organizations over this amount of space. Of course, some of this might be easier with some types of farming than with others.

What Are the Farm Trends?

Perhaps we should take a look at the situation with farming and all agriculture at the present time and see if we find any evidence of a trend toward fewer farms, larger farms, and tremendously higher investment per farm. The total value of all farms and farm assets in the country is 60 percent higher in 1960 than in 1950, and

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is concentrated in at least 20 percent fewer farms. The oft-hand expression that "farming is becoming big business" rings true when we consider such trends as these, and when we see capital investments of $100,000 to $250,000 or more per farm.

The sources of capital and operating credit for farming also is changing. During the last 10 years, our total farm debt has nearly doubled; evidence that much more outside capital is being used per farm and per farmer.

Farm supply firms, marketing firms, processors, and other related merchants and dealers — those firms depending on farmers to either purchase their products or to supply their raw products — are taking a more active part in financing farm operations. Farm supply businesses, for example, farm machinery and feed companies, extend credit to farmers to help maintain or expand sales of their products.

American Brahmans and cattle high in Brahman blood are the only bovines in the U.S. able to "twitch" their skin. Well developed panniculus muscles over the entire body enable Brahman and Brahman hybrid cattle to dislodge insects not reached by the switch.

Processors and merchandisers such as canneries, packers, and even retail stores — have extended credit to farmers on terms which permit them to specify the type of raw farm product delivered. This has been done in an effort to obtain the types of raw materials which will appeal to their customers. These firms are now lending in the neighborhood of one-third of the production credit borrowed by farmers.

Ways of Financing Farm Production

There are many different kinds of arrangements and methods by which the suppliers and market agencies help finance farm production. In some cases, it is just done when an individual farmer makes a good sized item of purchase, and he receives credit.

In other cases, it may be by a regular contractual arrangement. These contractual arrangements have been called, in recent years, a type of vertical integration. The supply or marketing firm may take on the decision-making as to the type of product produced and methods and procedures in management.

In many cases, the credit is the chief advantage that the farmer may get out of such an arrangement, but often there are some other advantages, such as an assured market and an assured price for the products he is selling.

Anyhow, the net effect of this development has been the tapping of additional sources of capital for agricultural production.

The importance of producing and marketing the types of products demanded by the consumer is becoming more widely accepted. Farmers are seeing the effect that producing to fit consumers' wishes, as these wishes are translated back through the marketing channels, can have on the dependability and security of the market for their products.

One resulting change in farming is greater acceptance of specification buying and contracting. Some phases of farm production are being guided more closely by demand through these devices.

Shortage of Adequate Financing

Even as we see lending activities of supply firms and various dealers continuing, even as we note the rapid increases in credit extended by commercial banks, Farm Credit Administration agencies, insurance companies, and other similar agencies to farmers, we also see evidence that there still is a shortage of adequate financing. In case after case, capital investments needed are too large to be financed by individual farmers through their present source of credit.

In the struggle to enlarge farm operations to more business-like commercial levels, other attempts are being made to assemble the needed capital from new sources and by different means. The new small corporation legislation which was passed in 1958 makes this more feasible. It provides for taxation of small corporations on the same level as individual and partnership businesses. The effect is to encourage the development of some corporation farms which are larger, and therefore more efficient, but which can be operated as a family farm.

Farm Transfer — A Critical Point

The individually-owned farm business reaches a critical point in its existence when the time arrives for it to be transferred to the next generation. In many cases, it is impossible for an individual heir to refinance the huge capital investment involved, particularly as increasing numbers of farms represent capital investments of $100,000 or more.

One method of perpetuating the farm business and avoiding the difficulty of re-financing it upon the parents' retirement or death is the formation of a family corporation, which can be done under the new small corporation legislation. Several of these corporations are being formed, and many people are considering such a move.

One question they ask is, "What will happen to ownership and control of the business after

incorporation?" As time passes, some members of the family may sell their stock to non-family members, providing the by-laws of incorporation are set up to permit this.

After a period of time and as the stock is transferred to interests outside the family, the farm may cease to be owned by the family which is operating it. However, this may indicate a procedure whereby the corporation in farming may become more dominant as it is in industry. This may take a long time.

How Fast Will Trend Go?

How fast outside interests will invest in farming depends on these factors:

- The relative returns to farm investments compared with alternative investments (considering interest or dividends and appreciation in value).
- The special advantages to non-farm individuals and firms obtained by influencing or controlling farm production to link up with their agriculturally-related business.

In general, returns to farming have not been high enough to attract much outside capital. The returns, however, vary widely between individual farms, depending upon the management, organization, and efficiency of the farming operation. Farms at the upper end of the scale in efficiency produce returns to capital high enough to be attractive to investors. How fast investors are attracted to farming will depend greatly upon the rate at which farms move toward the upper end of the scale.

There is little doubt that the future will see further developments along these lines. Farming will continually adopt more of the methods developed and proven by other types of business. The loose production-marketing relationship — which has failed to mesh total agricultural production with demand — will continue to be improved and tightened. While such developments may not completely solve our so-called agricultural surplus problems, they will certainly help do the job.

Yes, we see some trends in the financing and organization of farming which may make the structure of farming quite different in the next generations. Some of these trends are inevitable, and we might as well accept them with determination that we will preserve some of the virtues in the old structure of agriculture which we treasure so highly. Changes are taking place rapidly, and we should be concerned that we can so manage these changes for the gains to society.

Care For Lambs Before You See Them

A tale of you and the ewe . . .

Condensed from
National Livestock Producer
Stewart H. Fowler,
Louisiana State University

FOR that big crop of husky, market-topping lambs that puts profit into your sheep operation, start feeding and caring for your lambs before you see them!

If a ewe fails to produce and raise a big lamb or two next spring, it is more than just "tough luck"—there's a reason. When ewes fail to lamb or have undersized, weak lambs, or when ewes fail to provide milk for their lambs, these are signs that something was probably wrong with the way the ewes were fed and handled prior to mating and during pregnancy.

Your pregnant ewes are at the mercy of the weather, their developing fetus, and you! And, the only controllable factor is you. This places the profit-or-loss factor squarely at your door. Of course, a part of the success which can prevent your next year's operation from becoming a story in red ink depends upon an "eye of the master," which is alert to sense trouble and to act at the right time.

Consider your ewes as manufacturing machines—the feed and water they consume are the raw products, and the lambs produced are the finished product. Like any machine, if the ewe is to operate in an economical and efficient manner and produce a finished product at near capacity, she must receive the essential raw materials in optimum quantities and must be managed with care. For the ewe to accomplish her part in the production of profitable market lambs, she must receive proper and adequate feed and care. This is especially important from two to three weeks prior to breeding until lambing.

Watch out for Big Lambs

Good feeding and management of your ewes from two to three weeks before mating until they lamb next spring will definitely improve your lamb crop. Ewes that get good care and receive the right kind and proper amount of feed will produce more big, strong lambs. Big lambs are easier to save. Also, lambs that are heavy

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at birth gain more rapidly afterwards, especially for the next two to three months. Heavy birth weights thus shorten the time required to reach market weight.

As a word of caution, however, you can get your lambs too heavy at birth for the ewes' own good. Excessively high levels of good quality protein in these ewes' ration all during pregnancy can result in lambs weighing well over 10 pounds at birth. Many ewes, especially yearlings, have difficulty in giving birth to such large lambs, and veterinary help may be required. The average birth weight for lambs in this country is about 7 pounds, and there is little advantage to lambs much heavier than 10 pounds because of difficulties encountered at lambing.

Canadian research indicates that rations containing 10 to 13% total crude protein are adequate to produce lambs averaging approximately 9½ pounds at birth. Birth weights of lambs from ewes receiving a ration containing 7% total crude protein were significantly less than from the ewes receiving the higher protein rations.

The physical condition of your ewes when bred has a definite influence on the number of lambs produced. Ewes that are excessively fat at breeding time may not settle. It is thought that the excess fat may interfere with the normal release and fertilization of the eggs. Even if the eggs are shed and fertilized, the death loss of developing lambs is greatly increased in overly-fat pregnant ewes.

Controversy still exists as to wether the overfat ewe is sterile because she is fat, or fat because she is sterile. Nevertheless, gross overfeeding is unwise and costly in more ways than one. Some of the easy-keeping Dorset ewes in our college flock became too fat last season. They repeatedly accepted the ram but wouldn't settle. We put them on less desirable pasture and withheld all grain to pull them down in flesh condition and obtained a very high conception rate with the same ram.

A written farm lease greatly reduces the chances for misunderstandings between landlord and tenant.

Flushing Ewes Aids Breeding

The number of lambs dropped, however, will generally be increased by "flushing." This is the practice of feeding ewes well so they gain in weight prior to and during the breeding season. Flushing increases the percentage of lambs as much as 15 to 20% particularly when ewes are not in good condition at the start of the flushing period. Flushing may be

accomplished by turning the ewes on a fresh, luxuriant pasture two or three weeks before breeding time.

It will pay to reserve some pastures or parts of your range for this purpose. If such pasture is not available, however, equally good results may be obtained by feeding a grain allowance of ½ to ¾ pound daily over a period of two or thee weeks immediately prior to breeding. Whole oats, or a mixture of equal parts by weight of shelled corn and whole oats, is a satisfactory ration for flushing.

In addition to increasing the percentage of lambs, flushing generally causes the ewes to breed over a shorter period of time. Thus, the lamb crop will be more nearly uniform in size and easier to handle.

Keep an account in a book of all that you receive and all that you pay, for no man who knows what he receives and what he pays, ever runs out.

Daily feeding of 1/3 to 2/3 pound of protein concentrate per ewe during the first two to three weeks after mating may also aid in obtaining a high percentage lamb crop. This allows time for the fertilized eggs to become attached in the ewes' reproductive tract. It is reliably estimated that at least 30 to 40% of the eggs shed are destined to die before birth. Of these, 10% are unfertilized; the remainder die after fertilization. Most of this loss occurs in the first three weeks of pregnancy. This is an extra critical period as far as next year's profits are concerned! Abortions and resorptions of fetuses in late pregnancy do occur, but their extent is unknown in sheep.

The plane of nutrition of the ewe during the second and third months of pregnancy apparently has little or no effect on the health of the ewe or the lamb. However, see that the ewes don't become too fat during this period. If pastures are good and the winter is open, ewes will make satisfactory gains during this period without grain or hay. If adequate pasture isn't available, feed ewes harvested roughage. If legume hay is plentiful and cheap, it can make up the whole ration. A 150-pound ewe will eat about 4 pounds of hay daily.

Neither Too Fat Nor Too Thin

The level of nutrition again takes on added importance in late pregnancy. Actually, the most critical period is the last six weeks of pregnancy in ewes carrying single lambs. The rate of growth of the developing lamb, particularly in late pregnancy, is very rapid. It is approximately twice

as rapid as the human fetus. About 70% of the growth of the fetus occurs during the last 6 to 8 weeks.

As a general rule, you should feed grain to your ewes during the last four to six weeks if they are yearlings, too thin, or have bad teeth. Give a concentrate allowance of ¾ to 1 pound of grain daily. The amount will depend upon the quality of roughage available and the condition of the ewes. Start with ¼ pound per head daily and steadily increase the grain until the ewes are getting not more than one pound per head daily. Equal parts by weight of shelled corn and whole oats with about 10% cottonseed or soybean meal is a satisfactory supplementary ration.

Remember that supplementary feeding in late pregnancy is not a panacea for the ills occasioned by neglect to control nutrition at mating and in early pregnancy. The pregnant ewe should be kept gaining steadily from conception to lambing. In addition to maintaining herself, the pregnant ewe must supply nourishment for the growing fetus and for her fleece. The minimum gain should probably be equivalent to double the expected lamb weight. A general rule is that the ewe should gain from 15 to 30 pounds from breeding to lambing time, depending on her condition at breeding—and half the gain should be made during the last 30 days of pregnancy.

Change in flesh condition is a more reliable criterion of nutritional status than change in body weight. Underfed pregnant ewes lose condition rapidly when they begin to draw on body reserves. However, the total body weight may not change, because rapid fetal growth many compensate for loss of ewe body weight.

Learn the 'Feel' of Ewes

But, the actual condition of the ewe at any given time in late pregnancy gives no indication whatever of the nutritional status of the ewe. The only criterion is whether condition is being gained or lost. The assessment must be made relatively to flesh condition, say, two or three weeks before. Thus, the real need of the flock would be determined by a close examination of a representative number of ewes. A dozen or so ewes may be marked for weighing and assessment of flesh condition at intervals during pregnancy. If you don't already know how, you should train yourself to read the condition of your ewes by feeling their backbone and ribs. You will

About 2,000,000 U. S. farm families derive all or part of their income from dairy cows.

be surprised how much you will learn and how deceptive "appearance from a distance" can be when ewes are in late pregnancy.

The feeding of a grain ration in late pregnancy is especially important for twin-bearing ewes. They may be unable to consume sufficient nutrients in late pregnancy if only roughage is available. The twin fetuses occupy so much room in the abdominal cavity in late pregnancy that the capacity of the rumen is considerably reduced. Also, a very large amount of fat often present in the abdominal cavity of very fat ewes can further limit the capacity of the rumen.

Job opportunities off the farm will increase the number of farm operators who become part-time farmers.

Nutrition of the pregnant ewe plays an important part in determining lamb survival. Underfeeding during the critical periods of late pregnancy results in the birth of small, weak lambs with poor chance of survival. Such light lambs from undernourished ewes have a relatively large surface area which contributes to a more rapid fall in body temperature after birth. Thus, lighter lambs cool more quickly and may die under conditions where heavier lambs from well-fed ewes will survive.

Temperatures at birth of lambs from poorly-fed ewes average some two degrees below those of heavier lambs from well-fed ewes. Moreover, such lambs are much slower in adjusting their body temperatures after birth. Continuing low body temperature is associated with an increasing loss of activity and reduced effort to seek the ewe's teat.

Feed Ewes Enough Minerals

Undernourished ewes are slower to come into milk and, if undernourishment is severe, produce much less milk during lactation. Australian research revealed that where ewes are in exceptionally good condition, the milk secretion rate during the immediate post-lambing period is as high as 77 cc. per hour. In contrast, the average rate of secretion in poorly-fed ewes is only about 25 cc. per hour. Furthermore, typical colostrum was present in the udder of well-fed ewes at the time their lambs were born, whereas it did not appear in the udder of many poorly-fed ewes until some hours later.

The question of the need and importance of feeding minerals to sheep often comes up for discussion. Unless your area has a definite trace mineral deficiency, your sheep will get adequate minerals if you feed a mixture of two

parts salt and one part steamed bonemeal. This mixture should be kept before your ewes at all times. Trace-mineral mixtures fed free choice are necessary in areas where trace minerals are likely to be deficient. Before investing part of your sheep profits in a costly, complex trace mineral mix, check with your state agricultural college or county agent to see if such trace minerals are known to be deficient in your area.

Needless to say, clean water should be available to ewes at all times as it is essential to the health of the ewes. Even in cold weather, it takes from 2 to 4 quarts of water daily to supply the requirements of a ewe. This amount will not be consumed if the water is dirty or too cold. In freezing weather, use tank heaters if at all possible to keep water at a suitable temperature. The most economical temperature is from 35 to 40° F.

Ewes Need Exercise

Pregnant ewes should have exercise to help prevent their becoming o v e r f a t ; to produce strong, vigorous lambs; and to minimize trouble at lambing time. The easiest way to provide exercise is to have your flock on winter pastures. However, if you don't have such pasture available, feed hay some distance away from the sheds so the ewes will have to walk for it. If you confine ewes to a small lot, drive them at a moderate walk for about a half-mile each day.

Clip the wool off the rear quarters and udder about 30 days before lambing—this allows the lambs to nurse.

Comparison Of U. S. Wage Rates With Those Of Other Countries

Although difficult to fairly compare because of different standards of living, different living costs, and different social security benefits; here is a comparison of hourly wages in manufacturing in the U. S. and major European countries for April, 1959 as prepared by an official French agency.

Hourly wages in the United States	$2.71
Hourly wages in Britain and Germany	0.78
Hourly wages in Switzerland	0.77
Hourly wages in Belgium	0.74
Hourly wages in France	0.72
Hourly wages in Italy	0.61

Alex Wiley's Newsletter

FUN ON THE FARM

A Collection of Jokes and Humorous Farm Stories

A tractor salesman, going along a back country road, saw a farmer plowing his field with a bull hitched to the plow. Thinking this a likely prospect, he stopped his car, got out and approached the farmer.

He made his pitch and then asked the farmer if he wouldn't like to buy a tractor. The farmer replied, "I've got a tractor in the barn."

"Then why in the world are you using this primitive method of plowing?" returned the salesman.

The farmer answered, "I aim to teach this critter there's something else in life besides romance!" *Vee-Gee Messenger*

★ ★ ★

Two squirrels running through tree limbs, fell off. Lying on the ground, one said to the other, "This love-making in trees is for the birds." *Farm Facts*

★ ★ ★

A motorist after being bogged down in the sticky clay of a country road paid a passing farmer $10 to pull him out with a team of mules.

After he was on the road again, he remarked to the farmer, "I should think that at that price you'd be pulling people out of this stuff day and night."

"Nope," drawled the farmer. "At night's when I tote the water for the holes."

★ ★ ★

A gentleman farmer is one who tips his hat every time he passes a good looking tomato.

★ ★ ★

This small ad in a newspaper recently reaped rich rewards for the bookseller who inserted it.

"What every young girl should know before she marries. Profusely illustrated, specific instructions, sent in plain envelope."

Every eager soul who clipped the coupon received a cookbook.

Suffolk County Farm News

★ ★ ★

After several hours of luckless fishing, the little girl threw down her pole and cried, "I quit."

"What's the matter?" asked her father.

"Nothing," said the child, "except that I can't seem to get waited on."

Maize Dolan's grandfather had been seriously ill and was on a restricted diet. One afternoon the doctor told Maize the old gentleman was going to die and she might as well let him have anything he wanted to eat.

So, Maize, without, of course, repeating the doctor's forecast, asked her grandfather what he wanted for supper. When the old gentleman realized he could have anything he wanted, he asked for pancakes, eggs and strong black coffee. 'And," he added, "you might as well give me a slice of that home-cured ham."

"Hold on, Grandpa," Maize exclaimed sharply. "The pancakes, eggs and coffee you can have, but the ham no. That's for the funeral."—*Gladys Greene in American Agriculturist.*

★ ★ ★

Men who give in if wrong, are wise; men who give in if right—are married.

★ ★ ★

A little city boy spent his first night at the farm. Much earlier than usual he was awakened by the activity around him, and he remarked sleepily, "It doesn't take long to stay here all night, does it?" —*Mrs. W. G. Dedmon in The Progressive Farmer*

★ ★ ★

Sometimes a man pulls the wool over his wife's eyes by using the wrong yarn.

One cave-man to another: "Don't tell me there's no connection. We never used to have weather like this before they used bows and arrows." *The National Grange Monthly.*

★ ★ ★

Old Mrs. Greene, who lived alone, was a bit eccentric. One day while visiting a neighbor, she told that she kept all her savings in a shoe box in her bedroom. "But, don't you understand," said the neighbor, "you should have your money in a bank? You are just losing interest this way."

"Oh, no, I'm not," said the old lady, winking slyly, "I'm putting away a little extra to take care of that." *Butter-Fat*

★ ★ ★

Husband — A curious animal who buys his football tickets in June and his wife's Christmas present on December 24.

★ ★ ★

A household accident resulted in bad burns on a lady's face. At the hospital, they told her arrangements must be made for a skin graft.

The donor of the skin, of course, should be someone near at hand, so the husband volunteered. The skin was to be taken from an area of considerable expanse — but a part of the body where the scars wouldn't show later. Because the husband did considerable swimming there was

only one ample, concealed area from which the skin could be taken. The operation was a success. The husband after a few days of discomfort while sitting, felt no ill effects. Eventually the wife returned from the hospital, her face as good as ever.

"Darling," she said one night, "you'll never know how much it meant to me, your going through the pain of giving that skin so my face could be as good as new again."

"Oh, that's all right," he replied. "I get my reward — every time your mother kisses you."

Dugout News

★ ★ ★

The farmer had watched the motorist working on his second-hand car for about an hour.

"What are you looking at?" asked the motorist. "Is this the first automobile you ever saw?"

"No," was the dry reply, "but it's very much like it."

The Farmer

★ ★ ★

Last year 44,104 people died of gas. Fifty put a match to it, 54 inhaled it and 44,000 stepped on it.

★ ★ ★

Three-fourths of the earth's surface is water and one-fourth is land. It's clear that the good Lord intended man to spend three times as much time fishing as he does plowing.

It doesn't seem fair. We have most of the cars in the world but Russia has most of the parking space.

★ ★ ★

An inquiring reporter was making the rounds of the cracker-barrel set in a New Hampshire grocery. He asked one old fellow: "Can you remember the first girl you ever kissed?"

The old man laughed. "I can't even remember the last one."

Implement & Tractor

★ ★ ★

A child's question: If the Lord gives us our daily bread, and Santa Claus brings the Christmas presents, and the stork brings the babies, then what's the use of having Daddy around?" *Farm Store Merchandising*

★ ★ ★

The story is told about the farmer who was approached to become a member of the county watershed group . . . "Watershed," he exclaimed, "What do I want with a watershed? I don't even have a machine shed."

Buffalo County Journal

★ ★ ★

A new county agent, visiting a mountain farm for the first time asked, "Do you people have any trouble with insects in your corn?"

The farmer replied, "We sure do but we just fish 'em out and drink it anyhow."

Old uncle Pete had just had another fight with his wife and as usual he had taken refuge in his favorite barber shop.

"For over forty years she's nagged, and bossed me," he said. "You know I'd leave her if I weren't so old and set in her ways." *Badger Farm Bureau News*

★ ★ ★

"What is all that racket about out there in your barn?" asked a neighbor.

"Ma's trying to set a hen," replied a small boy who was swinging on the gate, "and you know pa's county agent and he's trying to tell her how." *Better Crops With Plant Food*

★ ★ ★

After a day of shooting at ducks without hitting any at all, one of the hunters said: "It's getting late. We might as well go home."

"Yeah," the other replied, "let's miss a couple more and quit." *Frank Bromley in The National Future Farmer*

★ ★ ★

"Is this a healthy town?" inquired the home-seeker of a local resident.

"Yes, certainly," was the answer. "When I came here I hadn't the strength to utter a word; I had scarcely a hair on my head; I couldn't walk across the room, and I had to be lifted from my bed."

"You give me hope!" cried the home-seeker with enthusiasm. "How long have you lived here?"

"I was born here," replied the native. *Holstein-Friesian World*

★ ★ ★

A raving beauty is a girl who has just placed second in a beauty contest.

★ ★ ★

At a town meeting, two candidates for county office were haranguing each other in a violent debate over their respective merits. In the midst of their decidely immodest oratory, a farmer got up and walked out.

Immediately a political worker ran up to him. "Decided on which candidate?" he was asked.

"No," said the farmer, shaking his head. "I'm just thankful."

"What for?"

"When I listen to them two," he explained, "I'm thankful only one of 'em can ever get elected." *Future*

★ ★ ★

Wealth: Any income that is at least $1,000 more a year than the income of the wife's sister's husband.

★ ★ ★

A woman wrote to a daily paper from a very lonely spot as follows: "My sister and I aren't exactly lonely out here. We have each other to talk to. But we need another woman to talk about."

Is Promotion The Answer?

Will it make consumers eat more farm products? Or are we just competing with ourselves? . . .

Condensed from Farm and Ranch

Bob Nichols

WE'RE doing a fine job of creating public demand for wool and lamb, confides Don Clyde, president of American Sheep Producers Council, promotion agency for the industry. But, sadly, "somewhere along the line this good work is *not finding its way back to the producer* in the form of *better prices for his products?*

Is that the "story of my life" for producer-supported farm product promotion programs? The sheep and wool promotion program, in theory, was one of the best ideas to come along. Sheepmen pay for it themselves (through *compulsory* check-offs out of their wool checks). And lamb and wool could sure use some more markets in this country.

Has the American Sheep Producers Council been one of the first to discover one of the sad facts of life for farmers: that you can struggle hard to get consumers to *use* more of your crop or livestock product—but "middlemen" soak up any price improvement it might cause? Does this kind of promotion work at all? Is it just "spit in the ocean?"

Rice has been promoted more systematically and more intensively than almost any other food crop. We asked Claybourne B. Ross, Jr., who is general manager of the Rice Council, and one of the industry's best-informed spokesmen. After three years, the Council feels it has "made progress" in promoting rice and increasing its consumption—but lacks figures to prove it. There's no evidence that people really *are* eating more rice—or that the market for rice has improved in the U. S.—because of the promotion. Like the ant attacking the rubber-tree plant, the Council has "high hopes"—and not much else—of getting America's consumption of rice up to 12 pounds per person.

Eggs? "The one big mistake producers make is to fall for the

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story that they can expect sales and promotion to pave the way for unlimited production at a profitable level." This will not occur," insists Don Turnbull, Executive Secretary of American Poultry and Hatchery Federation. Returns from consumer promotion of eggs are "hard to come by," he adds. "This doesn't mean that the egg industry should not promote eggs—it must. It has no choice."

Dairy products? "Not only is it rather ridiculous to think we can eat our way out of our agricultural surpluses, but we must face the fact that there are pressures on consumers to reduce their total food intake, in order to cut down excess weight." This from Frank Neu, Director of Public Relations for American Dairy Assn. "If we are successful in increasing milk consumption, this will be at the expense of some other food product. . . All of us have been living in some kind of dream-like world in which we seem to believe that consumption goals should be whatever we want to produce. Non-agricultural industries have learned they can't operate that way; consumption . . must be considered and production measured against the prospects."

In 20 years, dairymen have invested over $60 million in the ADA program. During that time, sales of cream have dropped, from 10.6 per person. down to 7.0 pounds in 1959. So have sales of evaporated and condensed milk and butter (from 17 pounds per person in 1940 to 8 pounds in 1959). But per-capita consumption of cheese, cottage cheese, nonfat dry milk and frozen desserts is much higher. In "milk equivalent," per-capita consumption in 1940 was 819 pounds; it was 678 pounds last year.

What *would* have happened if dairymen hadn't anted up $3 million a year? Would dairy product prices have been about the same anyway? Who knows? Even ADA can only say that it has "contributed to holding the over-all share of the market."

A certain myth in cattle-breeding circles ties rapid gains to the coarser, poorer grading type of cattle. It may have developed by confusing size with animal conformation. You can find pleasing conformation on a big animal as well as on a small animal.

Should producers themselves have put up this money to hold the market? "Why not?" asks Neu. "They have nine times as much economic interest in holding dairy food markets as any

other segment of the industry."

Beef? We asked Paul Cain, Executive Director of the Texas Beef Council. "Per-capita consumption of beef (in Texas) has increased by at least 40% since the Beef Council (promotional) program was launched in 1955," he reports. "Before the program was launched, the average housewife could identify and call for only about a half-dozen cuts of beef; most of them were the most expensive cuts," explains Cain. Part o fthe aim of the Council's program is to stress the less-known, cheaper cuts of beef, and "take some of the pressure of market demand off the sirloin and other expensive cuts and redistribute the demand among less expensive cuts." But the Council has no proof that it has yet been able to make that change in the patterns of Texas housewives' meat buying.

Pork keeps losing ground, despite $50 million a year spent in what National Live Stock and Meat Board calls "joint efforts of all members of the meat team" to get more consumption of *all* meats, and a special program launched by NLSMB last fall to "push pork." (That big bill is mostly footed by packers; there's little promotional effort paid for by hog producers themselves, and not much on a national scale by beef producers.) But per-capita use of pork this year looks like it will be only 64.6 pounds; last year it was 67.8.

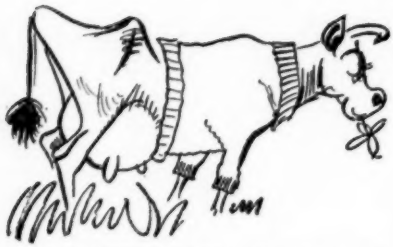
And average consumption of *all* red meats (beef, lamb, pork, veal) is less now (160 pounds yearly per person) than it was in 1955, the year the National Meat Promotion Committee was set up. Beef consumption, nationally, is about the same now as then—80 pounds per person.

Exclaims Earl Butz, Purdue University Dean of Agriculture (and former Undersecretary of Agriculture): "If we. . . attempt to persuade consumers that they should eat more beef—perhaps at the exepnse of pork or lamb or poultry—about all we accomplish is to induce the other industries to spend an equivalent amount of money in 'offset promotion,' and the whole industry ends up about where it started, except with a big promotional bill on its hands."

The United States is the world's largest exporter of farm products. The output of 41 million acres moved abroad last year.

During the past three years, exports averaged about half the U. S. cotton and rice output, two-fifths of the wheat and tallow, and about a third of the tobacco and soybeans.

How To Make Friends With And Influence Cows



A scared cow and a scared rabbit give about the same amount of milk . . .

Condensed from COBA News

A DAIRYMAN who has an ambition to breed a herd of better milk cows needs test records to guide his program. To be most useful, the production record of a cow must represent her "cowpower"—power to give milk.

A cow cannot show her "cowpower" if faults of the operator's management practices interfere. Try these rules to improve the value of records and performance of cows in your herd.

1. Never hurry, hit or holler at a cow. A scared cow and a scared rabbit give approximately the same amount of milk—treat the cow like an animal—not like a machine in a milk factory.

2. When you milk, milk. When the cow is done milking, the machine comes off, but don't yank it off so the teats snap like a rubber band either.

3. Be reasonably regular in your milking times.

4. Find out what you need to put in the front end, to get milk out of the bottom end. And put it there—especially, watch pastures.

5. Feed Dry Cows and Heifers as though they were going to milk eventually. Don't cheat on them because they aren't milking for the time being.

6. Do all you can to make them comfortable. No lice, plenty of bedding, plenty of water, plenty of light, and plenty of ventilation, too. Some folks are even giving her the large stanchion room which she needs.

7. Watch for little troubles—foot rot, milk fever, chapped teats, scabs, scratches, etc. Try to do something for their ailing or get Doc to help out.

8. Keep breeding records and dry old Bess in time.

9. Keep cows milking and never take the chance that causes a drop. Chances like—

a. Cows huddling up in the winter cold, wind and snow.

b. Using a cow-dog that can't be called off.

c. Running out of grain on Sunday morning at 5:45 a.m.

d. Ice-cold water, fed once a day.

LP Gas — How To Handle It

Unlike conventional tractor fuel, LP-gas is under pressure. Learn how to use it for safety's sake . . .

Condensed from Penn-Jersey Farming

Marvin E. Long

LIQUIFIED petroleum (LP) gas has several very definite advantages as tractor fuel, such as less oil dilution and longer service life of engine parts.

In addition, LP-Gas is less expensive than gasoline in some situations. If LP-Gas is already in use on a farm for crop drying or some heating, the same storage facilities is often the factor that discourages adoption of LP-Gas, a farmer may want to consider multiple use.

Safe as Any Other Fuel

Properly handled, LP-Gas is as safe as any other fuel. Improperly handled, it is just as dangerous as any other fuel. Learn the characteristics of LP-Gas, use ordinary common sense, and there will be no difficulties.

The fuel—a mixture of butane and propane—is a gas at ordinary temperatures and pressures, but it can be changed to a liquid by compressing it. To keep the fuel in a liquid state, it must be kept under pressure. The required pressure varies from a few pounds at low temperature to very high pressures at high temperature.

Watch Out For Leaks

Both propane and butane gas are heavier than air. Therefore, the gas will settle in low, quiet spots if it escapes from the tractor or the storage system. Thus, it is very important to prevent leaks, and to ventilate tractor storage spaces thoroughly before any spark or flame is produced.

LP-Gas (unlike gasoline in a tank) is always under pressure—always trying to get out of the tank and fuel system. All valves, fittings and lines must be leakproof. Never open any part of the system without first taking steps to relieve the pressure. The accepted guide for the safe handling and use of LP-Gas is the National Board of Fire Underwriters pamphlet No. 58. This pamphlet can be obtained from the National Board of Fire Underwriters, 85 John Street, New York 38, N. Y.

Reprinted by permission from Penn-Jersey Farming, 311 West 43rd Street, New York 36, N. Y.

From Liquid To Gas

The LP-Gas engine is essentially the same as a normal gasoline engine, except that the fuel enters the carburetor as a gas rather than a liquid. In the carburetor, the gas is mixed with air in proper proportions and metered to the cylinders.

Most tractors are arranged with a fuel strainer to remove dirt and other foreign particles from the liquid fuel after it leaves the tank. The liquid fuel goes from the strainer to a converter, which changes it to a gas. The pressure is reduced to the proper level for efficient operation of the engine. The heat required to vaporize the fuels is supplied by the tractor cooling system. The engine may be started on vapor from the top of the tank or on liquid, depending on the tractor's particular carburetion equipment. If it is started on vapor, no initial heat is required. When starting on liquid, let the engine warm up before putting the tractor to work out in the field. A farmer should not attempt to repair or adjust the converter on his LP-Gas tractor. This is a job for an experienced serviceman and will save money in the long run.

The filling of the fuel tank and starting the tractor involves procedures which will vary slightly among tractors, so it is best to consult the tractor manual. However, the general procedure is about the same for all tractors.

Two Hoses Are Needed

Two hoses are required to fuel an LP-Gas tractor. First, connect the vapor return hose from the storage tank to the vapor return connection on the tractor tank. This connection will be marked. Open the relief valve in the vapor return line to allow the pressure in the two tanks to equalize. Attach the liquid fill line to its connection on the tractor tank, and open the valve. There will be a petcock type liquid level gauge near the filler connection. Open this gauge momentarily at frequent intervals as the tank fills. When the fuel comes out as a liquid spray, the tank is 75 per cent full. Never fill it beyond this point; the extra room must be left for expansion with increased temperature. Do not open the liquid level petcock for very long at a time. It is a very dangerous practice to leave the petcock open all the time while filling.

Keep livestock out of fields of frosted sudan grass or sorghum. When these plants are frosted, deadly acids are formed. Just a few mouthfuls can kill cows. In case of poisoning, early treatment is important.

The tractor will have a vapor

control valve and a liquid control valve, either on the dash or on the tank. To start the tractor, slowly open the vapor control valve. When it is fully open, start the tractor just as if it had a gasoline engine. When the engine is thoroughly warmed up, slowly open the liquid valve, and close the vapor valve. By this method, the engine is started on vapor from the top of the tank. After the engine warms up, liquid is drawn from the bottom of the tank, and vaporized in the converter. When starting the engine on liquid, open the liquid valve and start the engine. Then permit the engine to warm up before putting the tractor to work.

To stop the engine, close the liquid valve and let the engine run until it dies. This procedure rids the lines of all liquid fuel, allowing the use of the vapor again for easier starting. After the engine has stopped running, be sure to turn off the ignition key.

The secret of happiness is not in doing what you like . . . but in liking what you do.

Many tractors have an auxiliary fuel connection in the line between the tank and the carburetor. This connection makes it possible to attach a portable tank if the operator runs out of fuel before reaching the main storage tank. These portable tanks can be filled from the main storage tank.

Here are some additional rules for the safe use of LP-Gas tractors.

1. Never smoke or light a match while fueling the tractor.

2. Never fuel the tractor with the engine running, or while the tractor is in a closed building. Some fuel always escapes when the hoses are disconnected.

3. Never fill the tank more than 75% full.

4. Always remove the battery ground before making adjustments on the engine.

5. Never store the tractor indoors unless the building is thoroughly ventilated.

6. Never enter a building in which an LP-Gas tractor is stored without first ventilating the building to assure a complete change of air.

7. Make sure that the tank and fuel system are empty if the tractor must be taken indoors to be worked on; also purged of all gas.

8. Before removing the fuel strainer drain plug or the converter drain plug, be sure that both vapor and liquid valves are closed, ignition switch off, and the engine is cold. Check for any residual gas in the fuel lines. This can be done by starting the engine with all tank valves closed.

Proper Land Forming Requires Planning

Water control is the problem. Land forming is the answer . . .

Condensed from The Mississippi Farmer

PLANNING which precedes actual earth moving is the key to land grading success.

First, the topographic survey of the field shows how the field or fields are in their present condition. Then the desired slopes can be superimposed upon the same fields.

This process points up the areas of the field that require cutting and those areas requiring fill. The planner, of course, must be sure there is enough cut material with which to make the fills. In other words, when the job is complete the cut and fill must balance.

After the proposed cut sheet is prepared, the areas where the cut is to be made should be checked for the type of soil that would be exposed. After a qualified soils man has examined the field, if there is any doubt about the suitability of the soil, samples should be taken and forwarded to the soils laboratory for testing.

Yields Vary

Individual soils have varied considerably in crop yields the first year or two after leveling. Some of the deep soils have produced more on the cut areas than on the fills. Some of the terrace soils have produced less on the cut areas for 2 or 3 years.

Believe it or not, some fields have produced a more uniform crop the first year after leveling to a uniform grade than was produced before leveling. Predicting yield changes which may result after leveling is not 100 per cent accurate at this time. Soil tests on some fields showed no difference in the top soil from that left after cutting. Yield differences have been observed on these same fields and areas.

The bright spot in the picture is that fields leveled to a uniform grade and irrigated, as a whole, produce higher yields than before leveling. The only exception has been where the work was done when the soil was unusually wet. Where puddled soils were left by leveling when the ground was too wet, row crop yields have been

Reprinted by permission from The Mississippi Farmer, Jackson 1, Mississippi

down the first year.

Should Be Dry

Land leveling work should be done when the soil is dry enough to not bog heavy equipment. For best operation, any stubble or crop residue should be disposed of before the land leveling is started. Stubble will educe the amount of soil moved per scraper load. It also hampers the planing or smoothing operation.

The com; leted plan should provide for efficient irrigation, good drainage and be suitable for use of modern machinery. The irrigation water should go through a minimum amount of canal or pipe to get to the field.

The man who makes no mistakes usually does not make anything.

On some poorly planned systems the water was carried around the farm, making irrigation almost impractical. Drainage ditches should be held to a minimum and be suitable for crossing *with cultivating equipment. Deep*er ditches should be located so as to not require crossing with farm machinery. Odd shaped fields and point rows should be avoided.

Check Finished Plan

When land grading is properly planned, then it is up to the farmer to see that his engineer checks the finished grade to make sure it is done as planned. Also, the farmer should perform the necessary maintenance for 2 or 3 years to take care of soil settling, resulting in water ponding. Checking of finished grades has shown that good drainage is obtained where there is a continuous slope of .1 foot per 100 feet or more.

A properly graded field, sometimes called precise leveling, should give these advantages:

1. Make seedbed preparation possible at the exact time desired.
2. Make seeding possible at more nearly the exact time desired.
3. Permit cultivation sooner after rains.
4. Permit more timely application of insecticides by ground equipment.
5. Make harvesting with machines more days per season possible.
6. Assure more timely destruction of stalks.
7. Permit these practices from 2 to 10 days sooner after adverse weather.

Many farmers have found after studying all the benefits that the cost of land grading is relatively small in comparison.

Here are tips to get ready for a survey of land to be leveled:

If you have requested government aid in precision land leveling, the area you plan to level

should be free from ridges and dragged or planed smooth before calling for a survey.

The Soil Conservation Service work unit in most soil districts will give you 2 rows of stakes each way in your field, so you can set the remaining stakes 100 feet apart each way. The SCS men will then take rod readings at each stake.

The yardage of earth to be moved will be figured, necessary ditches designed and a sheet showing the cuts and fills at each stake will be given to the landowner. These cuts and fills will be marked on the stakes prior to the start of earth moving by the contractor or farmer, or in some cases, the stakes will be set to the designed grade.

If you are requesting help in shaping land for drainage, and have applied for ACP payments, the SCS must see the area before earth moving starts, to determine the need for practice. Earth moving can start, using your own judgement about the high and low places. If you need engineering information to finish up the job, get in touch with your SCS work unit for help in finishing the fills and cuts. Yardage is not figured on this practice. This work should be contracted by the hour or by the acre.

Fall Soil Tests Recommended

Fall is a good time to have soil tests made, says William G. Stewart, agronomist at Colorado State University.

Testing soil in the fall has several advantages. First, fall testing allows the farmer plenty of time to plan his fertilization program. In addition, many farmers may be able to purchase fertilizer at an advantage during the fall and winter when dealers are not under the pressure of the spring rush. There is little difference in results between fall and spring soil testing—not enough to change the fertilizer recommendations.

Some fertilizers should be applied in the fall—especially phosphorus for legumes and alfalfa where plowing is being done in the fall for spring planting. Nitrogen also may be applied in the fall to aid in breaking down crop residues such as corn or grain stubble. but generally nitrogen is applied annually during the growing season.

Farmers who wish to make soil tests should see their county agricultural agent. County agents have materials and information for taking soil samples, and can help farmers adapt recommendations to local conditions. *Colorado State University*

Fowl Manure Is A Valuable Cattle Feed

Report from South Africa finds a valuable but neglected feed source on the farm . . .

Condensed from Farming In South Africa

W. A. Verbeek, Division of Animal Husbandry and Dairying, South Africa

MANY farmers will have noticed that cattle lick or eat fowl manure. Some African farmers have even started adding clean fowl manure to concentrates for dairy cows.

Fowl manure is a valuable but very much neglected by-product on farms. It is rich in nitrogen and its composition varies considerably according to the feed given to the fowls and the amount of foreign matter it contains. The composition of clean fowl manure is as follows:

	Fresh	Dried
Dry material	40.0	90.0
Nitrogen	1.7	4.0
Phosphorus	0.61	1.75

The nitrogen in fowl manure consists mainly of uric acid. As cattle are able to utilize non-protein nitrogen such as urea in their rumen by means of micro-organism, so they are able to utilize the nitrogen in fowl manure as a source of portein.

Because of this, cattle are able to convert the nitrogen in fowl manure into 25 per cent protein. Apart from nitrogen, fowl manure is also rich in minerals, especially phosphorus and even trace elements, and contains other useful organic elements. Usually fowl manure also contains a certain amount of concentrates wasted from the hoppers and which increases its nutritive value.

For this reason fowl manure is valuable as a "nutrient" for cattle and, as the animals do not find it too unpalatable, it may be added to their rations with advantage. The effort of collecting and drying clean fowl manure for use as "cattle feed" is well worth while.

Rations

At the Potchefstroom College of Agriculture in South Africa, young oxen were given a concentrate ration containing 24 per cent fowl manure to supplement corn forage with grain and satisfactory weight increases were obtained. The mixture was not pal-

Reprinted by permission from
Farming In South Africa, Depatment of Agriculture, Pretoria South Africa

atable at first, but the oxen gradually began to eat it readily.

Suitable rations for dairy cows may contain 10 to 15 per cent clean, dry fowl manure.

Fowl manure may also be used to tide beef cattle over the winter and may be provided together with dry roughage. The manure will be used most profitably if it is fed with corn meal or molasses, but no adverse effects have so far been noted in cases where cattle were fed on fowl manure and hay only. The addition of about one pound of fowl manure to the winter rations of beef cattle will do much to prevent loss of weight, it was found in the South African experiments.

Showing The Farmer's Share

Much of today's misunderstanding between rural and urban interests stems from wrong concepts concerning the farmer's take of the consumer's dollar.

Here is proof: At a super market in a central Illinois town, a lady shopper told by the checkout girl, "the amount is $12.91," exclaimed, "No wonder the farmers are getting rich." Here is a list of what she had in her basket.

6 Bottles of coke

3 pair of nylons

1 long-playing record

50 lbs. softener salt

1 box of corn flakes

a fifth of gin

1 egg beater

1 quart of milk

Actually her groceries came to 52c: 29c for the corn flakes, 23c for the milk. The producer got 10c for the quart of milk and perhaps 3c for the corn that went into the flakes. Only $13c out of her $12.91 bill could be charged to the farmer, yet she said, "No wonder farmers are getting rich."

Wisconsin Council of Agriculture Co-Operative News Letter

How To Plan A Water System

Planning a farm water system is not a 10-minute job. It requires careful thought and selection . . .

Condensed from Wallaces Farmer

Melvin E. Long

A WATER system doesn't cost —it pays.

In fact, if you take all the factors into consideration, it's far more costly to do without a water system than to provide one.

A farm water system involves more than replacing a hand pump with an electric one, and perhaps running a pipe into the kitchen. A water system includes the well, pump, tank, controls, pipe, and outlets.

You may not include everything in the initial set-up, but it will be far less costly in the long run to plan for their eventual installation. The water system that "just grows" without planning, will be the most expensive and least satisfactory one.

Daily Water Needs

This elusive figure forms the basis for the major portion of the planning of the system. Admittedly, it's difficult to arrive at a figure of the exact number of gallons to be used each day. In fact, it will vary from day to day. However, it is possible to estimate the requirements closely enough for planning purposes. The idea is to install a system that will be adequate, but not so much oversize that the cost is needlessly increased.

Here are some average figures that you can use to estimate your requirements:

Usage	Gallons per day
Household	50 per person
Dairy cow	15-30
Hog	4-5
Horse	12-14
100 chickens	6
Sheep	1-2
Washing milk utensils	40-50
Cleaning dairy barn	40-50
Garden or lawn watering	625 gal. per 1,000 sq. ft.

Types of Wells

There are many possible sources of water to supply your needs. These sources include wells, cisterns, springs, ponds, and lakes. Since wells are the most common source, the various types of wells will be discussed first.

The dug well is one of the

Reprinted by permission from Wallaces Farmer, Des Moines 5, Iowa

more commonly used types. It is usually 3 to 5 feet in diameter and less than 50 feet deep. The flow of water into the excavation furnishes a relatively large quantity of water from a shallow source. The walls should be lined with tile, brick, or stone to prevent caving and the entrance of surface water. Since they are usually located in a low spot, close to the water table, dug wells are easily contaminated by seepage and subsurface drainage.

Many dug wells now being used are polluted. If you use a dug well take every possible precaution to guard against pollution.

In areas of porous soils and no rocks, the driven well is the most economical. A point and a screen is attached to pipe, generally 1½ to 2 inch diameter, and the pipe is driven into the ground until it is below the water table. Fifty to 60 feet is the practical limit for driven wells. If the depth is over 25 feet the pipe should be 2 inch or larger to permit use of a jet or a cylinder to raise the water to the surface.

The bored well is made with an earth auger. Fourteen inches is about the maximum diameter if hand equipment is used. By using power augers, the well may be as large as 3 feet in diameter. The well is usually lined with vitrified clay tile as it is bored. This type can be bored to almost any depth thru sand, gravel, or clay, but 35 to 40 feet is the usual limit.

Tubular wells are made of pipe or casing, generally 3 inches in diameter or less. They are constructed by drilling, and provide a safe water supply. The casing extends from the base of the pump to the water supply. It is used as the delivery tube, eliminating the need for a well pipe.

For drilled wells, a well-drilling outfit is used to produce a hole by percussion or hammering. Diameter varies up to about 8 inches. A casing or pipe is driven as the hole is produced.

The drilled well can be extended to practically any desired depth. If the first water obtained is unsatisfactory, the casing can be continued on down in search of better quality or more quantity of water. A well-constructed drilled well is one of the best sources of water.

Cultivation of the earth is the most important labor of man. When tillage begins, other arts follow.

Other sources such as cisterns, springs, ponds, or lakes all present several problems as a source of the entire farmstead water supply. Springs and cisterns are usually too limited in capacity to be satisfactory as the only source.

Ponds or lakes may have adequate volume, but they offer several problems in purification of the water. In general, this type water will require an extensive system of filtration asd chlorination to make it suitable for general use.

Germicide For Eggs

An eggshell germicide that kills Salmonella bacteria on eggs has been discovered by Dr. Bert W. Bierer of the Clemson College Poultry Department. By washing eggs in a 1-percent solution of zinc sulfate, Dr. Bierer found that the number of Salmonella bacteria was reduced. The Salmonella bacteria cause pullorum, typhoid, and paratyphoid diseases.

Preliminary results of tests using zinc sulfate indicated that the bacteria causing "rots" and "exploders," sometimes a hatchery headache, may also be reduced by washing eggs in the zinc sulfate solution. And there appears to be no harmful effect on hatchability from use of zinc sulfate.

The zinc sulfate costs less than 15 cents a pound if bought in large quantities. Here's how to prepare and use the concentration to wash eggs: Add one-half pound of zinc sulfate to 5 gallons of tap water.

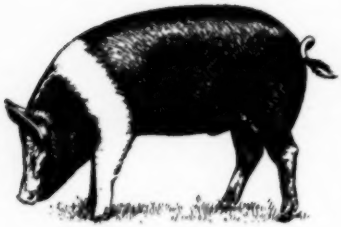
For a small egg operation a galvanized tub will make an adequate egg-washing vessel. Put enough of the 1-percent solution of zinc sulfate in the tub to cover a basket of eggs.

Dip the basket slowly up and down for 3 minutes. Use a second tub, also containing 1 percent zinc sulfate solution, for a 10-second up-and-down rinse. This second dip is absolutely necessary, even if a commerical egg-washing machine is used, because the first batch of wash water soon becomes laden with debris.

Change the first solution periodically whenever it looks dirty. Better results are obtained with zinc sulfate when the eggs are washed at 110 degrees. However, zinc sulfate operates efficiently even in room temperature solutions. After washing, store eggs in the usual manner.

The zinc sulfate is an effective detergent in itself. And whenever it was mixed with other chemicals or compounds, Dr. Bierer says that the germicidal or bacteria-killing effect was reduced. Eggs should be washed on the farm as soon as possible after gathering. Any delay markedly reduces beneficial results. *Clemson College*

Management Of Adult Boars



A British author stresses the vital points . . .

Condensed from Pig Farming

Frederick Vogt

BY the time the boar is one year old he ought to be pulling his own weight in the herd, provided he has been—and is—properly managed.

The adult boar should not, if possible, serve more than once every 24 hours. If used regularly over a long period, two services in three days seems to be best. But this is a council of perfection which in practice cannot always be followed.

If the boar must be used twice during a day, as long an interval as possible should elapse between matings, i.e., first thing in the morning and last thing at night. In summer this may not prove too difficult, but in winter heat is often of extremely short duration.

At this stage changes in his environment should not be made. If the female is brought to him (and this is by far the better arrangement) or vice versa, the same procedure should always be adhered to. It is inadvisable to take him into a yard or a pen where the presence of other stock may distract him, or to let him exhaust himself unduly by running uncontrolled with empty gilts.

Danger of Overwork

If, for instance, he has previously been kept indoors and is turned out with one or more gilts into the fields, he may—especially in inclement weather—not only overwork himself but also catch pneumonia after profuse sweating.

Inherited b e h a v i o r patterns and initial sexual experience leave a lasting impression on a boar and this considerably affect his economic performance. Proper management is a prime factor in efficient and profitable herds, and the boar must be fit for service throughout his useful life. This is particularly important in smaller herds where there may be only one boar (or one for gilts and one for sows).

Reprinted by permission from Pig Farming, Lloyds Chambers, Ipswich, Suffolk, England

Every boar has his day. When you have no longer any use for him, get rid of him. Many people seem to find it difficult to tear themselves away from an old friend. But sentimentality and business do not mix.

Boars in limited use are best run outdoors with in-pig sows. It's the cheapest method, and they will correct the position should any of the sows return to service. They can also be pulled in when required.

Tusks should be removed as a matter of routine.

Tight Control Essential

The method of management where boars run out with female stock has this big drawback—tight control, which is essential, is not possible.

In any event, the boar should be fully mature and be with stock already served. It is widely claimed—without backing of concrete evidence—that stock running out produces better results in fertility and litter size. The inference is that this is due to exercise and grazing, but in view of the observation on multiple matings later, it is more likely that repeated service during different stages of oestrus explains the resulting higher conception rate. Provided the on-heat pig is properly detected and managed, controlled and intensive management will give better economic results.

Whatever the service routine or the system of management, a service should be entered immediately afterwards in the stockman's records together with a "return due" date. The list should be prominently displayed all over the place, so that everyone can keep an eye on things.

Failure to settle a sow, or missing a heat, means feeding a sow for three weeks without getting anything in return. This is an overhead which handicaps the next litter before it is even conceived.

Theoretical advice on the size of a herd a boar can deal with is of little help. A lot of estimates of the number of sows per boar are current, but in any herd several practical considerations have

Inflation is what you have when your money won't buy as much as it would when you didn't have any.

to be taken into account. The total number of breeding females alone is no indication. For instance, as the herd ages, the number of boars required depends on the proportion of sows to gilts in the herd and on breeding policy.

Assuming three services a week, a conservative estimate can be made. Unfortunately, sows will not oblige by coming on heat one

after another every second day, so the boar's work is irregular. This is especially true since the advent of early weaning, and the fact that production of pork is no longer dependent on the letter "r" in the month.

Farrowing programs too are no longer the fashion, for nobody in his right mind would deliberately miss a heat, or have more specialised farrowing pens than is absolutely necessary.

Fertility

The fertility of the boar depends essentially on the concentration of normal, motile sperm in the semen. This in turn depends on heredity (breed or strain), health, housing, age, nutrition, climate and the frequency of matings.

Word of development of a two-crop-a-year apple comes from the South African Information Service.

There is abundant, if confusing, knowledge on the subject, but on the whole I believe that the boar's powers have been underrated, particularly in respect of service frequency. The boar's powers are much more elastic than we think. Individual boars differ a great deal and we must not forget the sow element. The management of a sow may be so outstanding that reduced fertility on the part of the boar is offset, or vice versa. Unless the gilt or sow is in the prime of heat, small litters or failure to hold to service may result.

Experiments have shown that the volume, concentration, total number of sperm and the proportion of abnormal sperm remains constant for a very long period if the boar is used regularly every other day, two ejaculations being usual. Boars used at 12-hour intervals may lose their libido (desire to mate) altogether within a few days. Basically, service frequency is a question of timing.

At one time, when pre-weaning nutrition of young pigs was not understood, prolificacy was considered a greater handicap than small litters. Some of the less common breeds, and even certain strains of the popular breeds, still carry this genetic handicap. This point must also be considered when examining the possible causes of failure.

Feed Boar Last

Pigs, on the whole, are extremely tough, but a boar's desire and power to mate are precariously balanced. Bad feed, lameness, an inflamed sheath, however slight, may lead to refusal to serve and infertility. During service the boar is compelled almost to double up, jack-knife fashion, and the feeding routine must be

adapted accordingly. Thus, the boar should always be fed carefully.

There are indications of seasonal reduction in the fertility level. In hot weather semen quality suffers. The scrotum is a heat-regulating mechanism and when it reaches the limits of efficiency it can no longer protect the sperm from deterioration. Hence there must be provision for shade and perhaps a wallow.

Low visability, low sperm production, and physiological reaction to the sperm within the female reproductive system may be influenced by any of the above factors.

The boar does not determine the number of pigs in a litter which result from a particular service—the exception proving the rule. But the evidence points to the quality of his sperm influencing the conception rate, and the vigour and weight of the litter. Semen containing 15 per cent or more of abnormal sperm has been responsible for degenerate foetuses and an abnormal proportion of weak piglets.

Where low conception rates and small litters occur, the boar and his sperm, together with all other possible causes, should be investigated and tested immediately. Delay in getting the smallest irregularities thoroughly looked into invariably leads to financial loss in one way or another. It is easy to arrange for a sample of semen to be obtained and examined.

Temporary or permanent sterility can be caused by disease (especially infectious), nutritional, physioligical, psychological or anatomical factors, or it can be hereditary.

Single Matings

One mating only is the common practice. It is thought sufficient, though there is no evidence for its being the optimum. Often mating consists of two successive services.

You have to stay awake to make your dreams come true.

Usually service lasts only a few minutes—or it may take up to 15 minutes or longer—and the patter of ejaculations must be appreciated. It consists of three distinct and visible phases, each phase being characterised by alternate sperm-poor and sperm-rich ejaculates.

For this reason (i.e, waves of varying sperm concentrations) one should not interrupt matings, but when the process is obviously finished, one should bring the meeting to an end and return the animals to their respective pens.

I know one breeder who curtailed matters forcibly without

deleterious effects of any kind. This was because the boar was conditioned to this pattern of events and the breeder has an excellent understanding of the mating-phases.

Multiple Matings

Multiple matings at different times during one heat are not very common practice. Yet there is experimental and field-work evidence that multiple matings result in somewhat larger litters than does a single service or two successive ones.

During some experiments, the average size of single-service litters was eight, whereas litters from double matings averaged ten. Further, a 90 per cent conception rate was achieved with multiple matings as compared with 72 per cent for single service. However, these results must not be taken to reflect on the boar alone. They only suggest that the management of the oestral female is not satisfactory.

Many pig farmers do not consider multiple matings feasible, while others think they are too time-consuming. But in a commercial 30-sow unit (producing baconers), one extra pig would amount to 60 or even 80 pigs a year, according to the system of weaning. This would spread overhead considerably. Alternatively, the unit could be reduced by two or three sows, thus saving the cost and risk of keeping them while maintaining present output.

Boar Services

The enormous losses to the pig industry through diseases are well known. Intensification, specialization and the increased density of stocking, together with the disappearance of isolation barriers (better transport facilities make for increased movement of stock), have added considerable hazards to the list of trouble with which we have to contend. Hence the growing number of farmers adopting a closed herd policy.

Hiring a boar, where stock is taken off or brought on to the farm, is a fool's game. It should not be allowed once AI is available.

Paging Doctor Babcock, Please!

Selling milk on protein test rather than butterfat may not be far away. Researchers at Ohio State University have already removed a major stumbling block by perfecting a simple protein test. Two main reasons would support the change: Consumers are extremely fat (overweight) conscious; also, dairy products contain large amounts of protein—cottage cheese, for example. *The Furrow*

Chimney Smoke

by Irene Rudie

We thank Thee, now O Father,
For all things bright and good,
The seed-time and the harvest,
Our life, our health, our food;
Accept the gifts we offer
For all Thy love imparts,
And what Thou most desirest,
Our humble, thankful hearts.

—From an old song.

★ ★ ★

The farm wife's Thanksgiving Day comes when she places her last jar on the cellar shelves and views her summer's work in neat and colorful array — the green, gold, and red of her pickles; scarlet tomatoes; fruits from farm and woodland; and her crown jewels, the jellies.

★ ★ ★

The neighbor's children caught and tamed a baby chipmunk. It made such a fine pet that when it grew up they looked around for a male so they could have a whole family of chipmunks. Many tries with snares were unsuccessful, and five-year-old Johnny had little patience for so much effort in finding a mate for their pet. "Why don't you just call the inseminator?", he asked.

I have learned to use a nutcracker for many of the plier jobs around the house. The reason? The men don't borrow the nutcracker, but they couldn't keep their fingers off my handy little pliers, and once outside I never saw the pliers again.

★ ★ ★

A mother who tried to cure her baby daughter of thumb-sucking by tying her pajama sleeve over her hand now has a greater problem. Summer or winter, the little hand has to be covered with a pajama sleeve to be sucked before its wearer can sleep.

★ ★ ★

It's more comfortable to ride in an old car covered with dust than in a new one covered with debt.

"This stuff doesn't kill many flies, but it sure makes them smell good," said a certain young man as he squirted his sister's expensive cologne around the room.

★ ★ ★

A very young miss heard about "necking" from her older sister's friends, but when a chance to use the word came up she was a bit confused. "Sis is out 'shouldering' with her boy friend," she said.

★ ★ ★

A city bank is using the slogan "Tuck a buck a day away" in its advertising, and that's exactly what the party of deer hunters would love to do.

Farm Population Drops

Only 9% of our population is now classified as farmers and their families in the new 1960 census data.

Quite a change from Grandpa's time when half of our folks lived on farms and really produced crops and livestock. Most of the drop from 1950 data represents the continuous trend toward larger farm units. It actually is a result of 2 or even 3 farms being consolidated into one. Part of the decrease in farm population is due to a technical change in what Uncle Sam calls a farmer. The new rule requires that a man must sell at least $50 worth of crops or livestock per year. This takes about four rillion people off of the list as it formerly was made up. Obviously this change should have been made years ago.

The Chicago Farmers Bulletin

When buying feed supplies take advantage of seasonal price swings for both concentrates and feed grains by using the following table to determine the usual high and low price months of various feeds:

Feed	High	Low	Difference
Corn	Aug.	Nov.	14%
Oats	May	Aug.	23
Barley	Apr.	Aug.	10
Soybean Oil Meal	Jul	Dec.	17
Cottonseed Meal	Jul	Oct.	7
Linseed Oil Meal	Jan	Jun	13
Alfalfa Hay	Jan	Jun	24
Alfalfa Meal	Jan	Jun	22%

Do You Carry Enough Insurance?

What constitutes "adequate" insurance coverage for farm buildings? . . .

Condensed from Agricultural Banker

J. H. Atkinson, Purdue University

FARMERS are generally aware of the need for some kind of insurance on buildings.

In a recent study at Purdue University in which the National Association of Mutual Insurance Companies cooperated, every one of a sample of 126 farm owner-operators carried some amount of insurance on one or more buildings. Most carried fire, wind and extended coverages. But the ratio of insurance coverage to value of buildings varied widely.

First step in planning insurance coverage on farm buildings, should be a reliable estimate of their value. What methods are available for use in estimating building value?

We could look at "book value" — original cost minus depreciation. But changing costs can make this method of evaluation almost meaningless over a period of years.

Another approach to estimating building worth would be to evaluate the remaining life of the structure in terms of present costs. For example, material costs currently are about 2 2/3 times the 1935-40 figures; therefore materials for a $3,000 barn built in the late 1930's would now cost $8,000. Assuming the new barn would last 40 years, depreciation averages $200 per year. If your old barn is estimated to last another 20 years, the present depreciated value of materials would be $4,000 — more than the original cost 20 years ago!

Many barns built 20 to 25 years ago are worth more in terms of rebuilding an identical structure than when they were new. But how many older buildings, if destroyed by fire or windstorm, would be replaced with identical structures? Smaller ranch type houses have replaced the sturdy 10 to 15 room two-story farm dwellings of a generation ago. The gambrel-roof horse barn (many "good" ones still stand) are being replaced with pole-frame structures. Stanchion type dairy barns are giving way to milking parlors, with loaf-

Reprinted by permission from Agricultural Banker, 919 North Michigan Avenue, Chicago 11, Ill.

ing sheds attached.

The utility of a building is important in estimating its value.. A building which has little or no utility probably has only a salvage value. It should be pointed out to the farmer that insurance is designed to cover only real economic losses.

The "utility value" of a building is simply an estimate of the value of an existing building in terms of some other structure which would serve the same purpose. Steps in arriving at this utility value are:

1. Decide what kind of structure would be built if the existing building were destroyed.

2. Estimate the cost and length of life of a replacement building.

3. Divide replacement cost by years of life to get annual depreciation.

4. Estimate remaining life of existing building and multiply by annual depreciation of replacement building.

Here is how we might estimate the utility value of a general purpose barn used as a hog feeding barn considering that it could be replaced by a pole-frame barn with concrete floor.

1. Cost of replacement, $3,000; length of life 30 years.

2. $3,000 ÷ 30 = $100 per year depreciation.

3. Remaining life of existing building, 20 years × $100 = $2,000 utility value.

Estimates of the length of building life should be conservative. Rate of physical depreciation as well as possible obsolescence should be considered. Technology in grain handling and livestock production could cause a high rate of obsolescence over the next decade in our present "modern" buildings.

Individual vs. "Typical" Utility Value

The use to be made of a building varies among individuals. Experienced appraisers try to decide on the typical or most likely use in estimating probable sale price of a farm. But a given building might be worth either more or less to an individual farmer than to the "typical" farmer. Yet if the individual sold the farm, the most likely buyer is the "typical" farmer. For example, a dairy farmer at age 58 decides to sell his dairy herd and keep beef cattle until he retires at 65 at which time he plans to sell the farm. If the farm is logically suited to dairying, the

A complete record of farm receipts and expenses—together with inventory changes—furnishes the necessary information for locating the strong and weak places in the farm business.

dairy barn probably has value even though not in use by the present owner.

An "odd" building may have considerable worth to an individual farmer who is permanent enough to use the structure for a number of years. He should be reminded, however, that if he sells the farm, he likely will not recover the cost of an "odd" building.

The problem of individual versus typical value is difficult to solve. Certainly there are good farmers whose peculiar farm organization and management ability make it profitable for them to utilize unconventional buildings. And while the typical or most likely buyer of the farm would not consider the buildings as having much value, there are no doubt a few prospective buyers to whom the structure would appeal. Thus, the farmer who has an "odd" building which is useful in his farming operation certainly needs insurance protection.

What science knows now indicates that the public does not need to be alarmed about the level of strontium-90 in the U. S. milk supply at the present time. The Public Health Service is aware of the probem and is constantly watching the situation as it develops.

Utility Values

Before attaining much improvement in the ratio of insurance to value, farmers need to estimate building value to determine economic loss which could occur from insurable hazards. Changes in both construction costs and building utility make the original cost minus depreciation method of valuation subject to error.

Estimating value based on present cost of constructing an identical building solves the problem of changing costs but may give wrong answers because of changes in building utility. If a building has little or no utility, it might have a salvage value. For useful buildings, estimates of utility value probably are most appropriate for insurance purposes.

It is wise to observe trends in design and construction of farm buildings. It is fairly easy to get estimates of local construction costs which can then be expressed in some convenient way such as cost per square or cubic foot, cost per bushel of grain stored, cost per unit of livestock housed, etc. With such information, you can do a better job of determining the utility value concept of estimating the worth of farm buildings. Once the approximate economic value of buildings is estimated,

both problems of over-insurance as well as under-insurance are well on the way to solution!

What about perils — is fire protection alone sufficient? No, and the farmer should be reminded that a loss is just as real whether it is due to fire or any other insurable peril.

The argument is sometimes advanced that, because the chance of loss from fire and other insurable perils is remote, farmers are not taking much risk of loss by insuring buildings for a small fraction of their value. While there is some truth in this argument, the very fact that the chance of loss is remote (and possible losses are large) makes it almost impossible for farmers to "average out" losses and, in effect, carry their own insurance. Damage from one fire or windstorm could result in losses far greater than insurance premiums which might be paid over an entire lifetime. For farmers who are willing to accept some risk, insurance costs can be reduced by purchase of deductible type policies. But cutting costs by reducing full coverage (the thumb rule on maximum coverage is 80% of value) may prove to be false economy!

Fatty Acids Start Rumen Development In Young Calves

Research has pretty well established that certain fatty acids are responsible for starting rumen development in young calves. The acids, naturally present in the digestive system, are propionic, acetic and butyrci.

But a Colorado State University experiment showed that deliberately introducing more of these acids into the digestive system does not speed this development.

Clyde Vair, graduate assistant, conducted the test with five groups of calves. Four groups got a normal calf ration of milk, hay and grain. In addition, one group received 10 grams of sodium acetate per head per day, fed in milk. A second group received 10 grams sodium propionate, a third 10 grams sodium butyrate. The fourth group received no additional acids.

All four lots were slaughtered after 35 days of testing. Vair reported no significant difference in rumen development.

The fifth group of calves, fed nothing but milk during the test period, showed very little rumen development when slaughtered, Vair noted. *Colorado State University*

A Look At Farming In 1970

A look ahead sees more services, more machinery, more fertilizer, and more of everything it takes to operate a high-geared, efficient farm . . .

Condensed from Western Farm Life

Bruce Russell

ANY attempt to predict the farm market for any product in the 1960's must take into account some of the revolutionary trends that have been, and are still taking place in agriculture.

One of these is the exodus of people from the land to urban areas. The records disclose that every year since 1950, 750,000 persons annually have left the farms. Between April, 1956, and April, 1957, the figure was 1,861,000, and it is reasonable to assume that in 1958 and 1959 the figure was even higher.

Small farms are rapidly being combined with other farms to make larger, more economic units. The trend to fewer farmers and bigger farms will continue through the 1960's at an accelerated rate. Farm population, which now represents approximately 11 percent of the total U.S. population, may well be down to 7 or 8 percent, possibly lower by 1970. Some are predicting 5 percent.

At a Midwest conference of college and university researchers and teachers, held in 1958, the following predictions were made:

"If agriculture adjusts fully to the possibilities, as now seems possible, the number of farms in 1970 will probably be about half the number existing in 1940. Production per man will be three or four times as large (now 40 percent greater than 1940), and capital used per man will at least double."

Number of farms (in millions)—(estimate)—1940, 6.3 M; 1957; 4.9 M; 1970, 3.2 M.

TODAY'S farmer produces enough for himself and 21 other persons. By 1970 it is expected that one farmer will produce enough for himself and 34 others.

This is a startling agricultural revolution. Assuming that it materializes, farming must necessari-

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ly become more intensive, larger-scale, more costly, and more scientific.

The trend toward more intensive and more specialized farm operations is already established. During the past 15 years we have seen the broiler and egg industries change from an individual enterprise to a highly specialized operation. Integration of the poultry industry is today a reality. The poultry industry was a "natural" for integration.

A start toward integrating hog production has been made, and this process will continue. However, the complete integration of the swine industry will be slower in development because swine production involves many problems not common to the poultry business. Nevertheless, in the long run, swine production may be a specialized, integrated operation. It has been estimated that 60,000 hog farmers with 100 sows each, using a multiple farrowing system, could supply the market now being supplied by 2 million farmers.

Small farm dairy operations are giving way very rapidly to larger operators with sizable herds. Cow "pools" appear to be making headway in some areas. Specilization in fluid milk production will continue.

IN THE BEEF business we will see the development of more and more commercial feed lots during the 1960's. Commercial feed lots have a distinct advantage over the farmer-feeder in purchase of feeds, labor, and timely buying and marketing of cattle. Narrow profit margins will force many small feeders out of business in the next five years.

We will probably see specialization in crop production, too—crop producers supplying large livestock operations.

These are revolutionary trends. How rapidly they will materialize is problematical. In the long run, these changes should have a favorable effect on business.

We would be completely unrealistic, however, if we ignored the economic implications of these revolutionary trends. You have read and heard much about the "squeeze" on agriculture. It's not just conversation, it's real.

Cattle bruising during marketing and processing caused losses ranging from 6 cents to $2.77 a head in a study made by the U.S.D.A. This adds up to a 12-million-dollar-a-year loss.

Because of technological advances, capital requirements in farming have risen rapidly. During the past 25 years, American farmers have been rapidly substituting capital for labor. The

value of assets used by farmers has gone from $102 billion in 1946 to $203 billion in 1959. Farmers' costs have increased annually 19 of the past 21 years. From 1956 to 1959, the average increase was $7.8 billion per year. It is estimated that farmers will have to spend this year 70 cents out of each dollar they take in for operation. Total debts of farmers have increased from $7.8 billion in 1956 to $20.8 billion in 1959. And, 1960 net income will be down $900 million from 1959 and $3 million below 1958.

The average American farm represents an investment of approximately $27,000 per worker, as compared with an average of about $15,000 per worker in industry.

THIS MEANS that farmers will have fewer dollars to spend. Competition for these fewer dollars will be keen. Those who supply the farmer will have to work hard to get their share.

Lower farm income has in part been due to lowering of government price supports. Government farm programs past and future have and will affect business.

The present farm program is long overdue for an overhauling. As you know, there is much talk about what should be done, but there is little agreement between farm organizations, the administration, or congressional leaders.

Studies made at the request of Senator Ellender, chairman of the senate agricultural committee, indicate what might happen if all controls and price support prices were abandoned. The study was made by USDA technicians and reviewed by a number of land grant college farm economists.

These study groups say that if support prices were set at levels to provide for orderly reduction of surpluses over the next 7 to 10 years, prices for major farm products by 1965 might be about as follows:

Beef—$15/cwt
Hogs—$11.20/cwt
Milk—$3.60/cwt
Corn—80c per bushel
Wheat—90c per bushel
Soybeans—$1.60 per bushel
Eggs—29c dozen (down 20%)
Broilers—15c

If prices dropped to these levels, net farm income would be reduced $7 million by 1965.

THESE STUDY groups hasten to explain that these figures are presumptions, not predictions. They seem pretty well agreed, however, that progressively lower support prices and removal of production controls would result in—

1—Increased production. 2—Re-

duced farm income. 3—General depressing effect on all farm-related businesses.

The American public has too big a stake in agriculture to completely abandon government farm programs. It is apparent, however, that agriculture has lost considerable political bargaining power in recent years. It is also apparent that attitude of the public toward agriculture is unsympathetic. This is due largely to the failure of government programs to date and a lack of understanding of the problems of agriculture.

Future government agricultural policy will be dictated by the representatives of our urban population. Future government programs will have to be acceptable to them, as well as the farmer, or they will not be instituted.

We must somehow come up with a plan to bring production in line with consumption. Lowering of price supports does not discourage production, in fact, lower prices encourage increased production.

The most l o g i c a l approach seems to be acreage reduction to the extent that it is effective. It has been estimated that if 60 to 70 million acres of good land were removed from crop production, production and consumption could be brought into balance. It has been estimated that this could be done at an annual cost of $1½-$2 billion. The cost of our present ineffective program is $3½ billion.

IT IS HIGHLY important that all of us interested in the welfare of agriculture go all out to improve agriculture's public relations. Support of the urban population in the 1960's will become increasingly important to agriculture.

Then, too, let's quit kidding ourselves . . . 1—Population increase will not solve the surplus problem in the foreseeable future. 2—Relief through foreign markets is over-rated. 3—We cannot rely on "chemurgy"—new industrial uses for farm products to do the job.

While population increase will not solve all farm problems it is

Good dairymen identify their dairy heifer calves by ear tags, photographs or sketches showing color markings.

a factor to be considered. Let's explore the need for more livestock and probable livestock production in the 1960's.

Based on annual population increases of 3 million per year, reaching 220 million by 1975, a USDA researcher figures the demand for farm products will expand 45 percent in the next 15

years. Use of livestock products, he says, will increase more than the use of crops. As compared with 1955, the following increase in livestock numbers necessary to meet the demand would be—28.5 million cattle, 45 million hogs, 6 million sheep, 20 percent more chickens, 50 percent more turkeys.

Following past patterns, American farmers will not only meet, but they will surpass, these requirements.

A significant factor in the probable marked increase in livestock numbers in the 1960's is the build-up of feed grains. At the beginning of the 1958-59 feeding season, the total carry-over of the four major feed grains was 59 million tons. At the start of the 1959-60 season, it had increased to 67 million tons. A year from now it is expected to reach 80 million tons.

When cannibalism is serious in a flock of pullets it is usually wise to debeak even though egg production is at a high level.

MUCH OF THIS increase in feed grains can be contributed to applied crop technology. From 1947-49, national crop yields have gone from an average of 36 bushels per acre to 52 bushels; grain sorghums from 19 to 36 bushels per acre. For the four major feed grains (corn, oats, barley and sorghum), combined yields per acre in 1958 and 1959 were 37 percent higher than 1947-49, and 52 percent above the level of 1940-42. If the trend of yields from 1940 to date continues to 1965, yields per acre will increase another 15 percent.

If feed grain prices continue as they are now, to be low in relation to livestock prices, it is a certainty that livestock numbers will increase. Because of lower government supports on feed grains, this relationship is apt to continue with or without controls.

In the 1960's the stage appears to be set for fewer farms, fewer farmers, and greater total agricultural production.

More important to us all (and especially to industry), than the number of farms or farmers, is the kind of man the future farmer will be.

For generations, farming was a way of life. Whether we like it or not, farming is becoming more and more industrialized. Today it's a complex business. The same principles that spell profit or loss to other businesses, now apply to farming. In this industrialized climate, superior management is a must. Those who do not have it, will not survive. Higher capital investment, higher operation costs, and narrowing profit mar-

gins per unit of production will not tolerate the losses from annual diseases and slip-shod livestock management that have existed in the past.

DURING THE 1960's industry will be dealing with an increasing number of larger, more efficient livestock producers who will be regular and consistent buyers of products.

There are many revolutionary trends taking place in agriculture. Some will develop rapidly, some rather slowly, but there will be continual change. These changes will require frequent adjustments in policy and procedure especially for those who sell to and serve farmers.

As we progress further into an industrialized farming era, industry will be dealing with fewer but better customers. Because there are fewer farmers it does not necessarily follow that volume of sales will be down. Farmers who survive this agricultural economic revolution will carry out preplanned programs that will demand a greater volume of industry's products than exists today.

The 1960's should be profitable and challenging years for all business dealing with, or associated with, agriculture.

What Feeds Weigh

Rough Guide for Estimating Pounds of Grain and Supplemental Feeds:

12 ears of corn	=	7½ lbs.
1 gallon shelled corn	=	7 lbs.
1 gallon ground corn	=	6 lbs.
1 gallon of corn & cob meal		5½ lbs.
1 gallon wheat or kafir		7½ lbs.
1 gallon ground wheat		7 lbs.
1 gallon oats		4 lbs.
1 gallon barley		6 lbs.
1 gallon ground barley		4½ lbs.
1 gallon molasses		12 lbs.
1 gallon bran		2 lbs.
1 gallon shorts		3½ lbs.
1 gallon linseed or cottonseed meal		5 lbs.
1 gallon tankage		6½ lbs.
1 gallon alfalfa meal		2½ lbs.
1 gallon ground oats		3 lbs.

Kansas Farmer

Cattle Lice — Spray Now For Prevention

The old saying "prevention is better than cure" certainly applies with cattle lice . . .

Condensed from The Journal of Agriculture of Western Australia

F. C. Wilkinson, B. V. Sc., Veterinary Surgeon

ALTHOUGH lice infestation can occur in any season of the year, the heaviest infestations are found during the winter.

This build up of lice infestation normally starts in the autumn but if the cattle are treated by spraying at this period, the majority of the lice are killed and the build up is prevented. Thus the old saying "Prevention is better than cure" certainly applies with regard to cattle lice.

Beef and dairy cattle of all ages are liable to lice infestation and these parasites can be responsible for serious financial losses as their presence leads to retarded growth rates in young stock and reduced milk yields in milking cows. Cases have even been seen of infertility in severely-infested bulls. This is easily understood when it is realised that lice-infested animals spend most of the time, normally devoted to feeding and rumination, in rubbing and scratching to allay the irritation caused by parasites.

Lice on cattle can cause the following symptoms. In heavily lice-infested animals which are constantly rubbing and scratching there is usually a marked loss of hair and the coat becomes rough and shaggy. In very bad cases the hairs of the coat become matted. The skin becomes dry and scaly so that large scabs or crusts may form, resembling the lesions of mange.

Lousy animals are restless, do not feed well and their reduced condition may make them susceptible to other diseases.

Lice infestation causes lower milk production in dairy cattle and leads to retarded weight gains, particularly in young stock. In the case of calves, lousiness leads to much licking of the coat, and since the hair is loose, hairballs form readily and frequently lead to internal disorders.

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The Journal of Agriculture of Western Australia, St. George's Terrace, Perth, Australia

The constant drawing-off of blood and tissue fluids by sucking species of lice can lead to severe anaemia, and deaths from this cause may result when infestations are particularly heavy. Under most conditions experienced the lice populations commence to build in early winter when the pastures are low in nutritional value and when young cattle in particular find it difficult to obtain sufficient nourishment to keep them in a healthy condition.

The most effective sprays available are dieldrin and B.H.C. preparations and these should be applied to all the skin surfaces, particular attention being paid to the underside of the animals. It is preferable to repeat treatment in 14 days to kill any lice which hatch out from the eggs on the skin and in the hair.

In conclusion, I would like to warn you against the economic loss which can occur due to lice infestation and reiterate that with little trouble or cost this loss can be prevented. (U.S.D.A. and University of Wisconsin recommendations for lice control include dieldrin, B.H.C., toxaphene, lindane, malathion and Co-Ral wettable powder. Be sure to check latest regulations for use on dairy cattle).

Higher, Higher Farm Taxes

Taxes on farm real estate in 1959 show the greatest rise in a decade. Excluding Alaska and Hawaii, farm real estate taxes totaled $1,192 million, an increase of $89 million or 8 percent above the 1958 level.

State and local tax levies averaged $1.11 per acre, an 8 cent gain during a year, while the index of taxes levied rose 15 points over 1958, to a record high of 199 in 1959 (1946-48 being 100).

Farm real estate taxes rose in all states, with West Virginia, Arkansas and Florida leading the way with 20.1, 19.8, and 16.4 percent, respectively. Taxes per acre averaged highest in New Jersey at $9.15 and lowest in New Mexico at 10 cents, with 14 states listing an average of more than $2.

While the uptrend in farm taxes has been about the same as the rise in market values of real estate in recent years, taxes rose more rapidly in 1959 to a level of 93 cents per $100, highest since 1949. Likewise, taxes reached the highest proportion of net income since the early 1930's, absorbing 8.5 per cent in 1959.

Harry Swartz in Farm Facts

Cutting The Costs . . .

That Cut The Profits!

How to attack your costs with a plan . . .

Condensed from Missouri Ruralist

HIGHER costs, coupled with lower prices, have reduced income on many farms.

In the past, farm families have met this squeeze by tightening their belts and working harder. But on many farms it is not possible to meet this squeeze that way, since many cash costs are fixed. One alternative is to cut costs that have cut profits. Farm management specialists of the Missouri Agricultural Extension Service have prepared suggestions for cutting these costs.

Material presented here was prepared for a series of "Young Couples Schools" that are in progress in Missouri. Only a few high lights can be presented here.

The schools have been held for couples because man and wife are business partners today. The day has passed when the farm wife took care of only the "egg money" and the big farming decisions were made only by the husband.

"The man is the head of the family and the woman the neck," goes an old-country adage. "But don't forget that it is the neck that turns the head."

Wives, as a partner in a $30,000 or more business, should know how much income the farm nets a year, status of mortgage payments, leasing arrangements. Men should know how much the wife needs to operate the home. Regular "board of director" meetings to keep abreast of finances are important to both husband and wife.

How much is a wife worth? Studies in Illinois, in which married and single men with land of equal size and quality were compared, showed married farmers averaged $2,400 a year more income than single men. It takes an investment of $60,000 at 4 percent interest to return $2,400 a year. So— a wife is an asset worth $60,000.

Reprinted by permission from Missouri Ruralist, Fayette, Missouri

A farm business is a combination of land, labor and capital (operating and investment). These are called "inputs." The skill in handling these inputs is management. How efficiently the manager combines and balances these inputs largely determines the level of income called "outputs." Inputs subtracted from value of outputs result in profits.

Problem is to combine resources (land, labor and capital) in such a manner that will get production at a cost-per-unit low enough to leave a margin of profit—and volume sufficient to bring in enough dollars to support the family and pay debts.

The tightening profit squeeze emphasizes the need to analyze an operation with the following in mind:

Can I increase my volume of production?

Where are the possibilities of reducing costs?

Am I doing the best job of marketing?

As a usual thing, where volume of production can be increased on the same acres, with essentially the same equipment and labor, and at the same prices, the cost-per-unit goes down and net profit goes up. True, some additional costs will be involved in increasing volume, but costs will be spread over more units.

But reducing expenditures sometimes can reduce income and increase unit costs—as in cutting money spent for fertilizer. It is one thing to cut down on expenditures but it may be quite another to reduce cost of production or unit costs.

Increasing expenditures might often increase income and lower unit costs—as with better sires, pasture improvement, certified seed, weed control chemicals, pesticides, irrigation, drainage, land leveling and similar expenditures.

Keeping records is the only accurate source for knowing what costs are. A good set of records will give you (1) financial progress, (2) costs of production over-all and by enterprises, (3) receipts and expenditures monthly and yearly, (4) record of inventories, depreciation, (5) an invaluable aid in income tax reporting.

Costs continue to go up. The battle for profits on the farm can best be expressed in today's figures on costs vs. income.

The wings of the common house fly vibrate at 21,120 times per minute, or 335 times per second. Honeybees vibrate ther wings 26,400 times per minute.

PERCENT OF TOTAL CASH FARM RECEIPTS THAT ARE CASH FARM PRODUCTION EXPENDITURES

Year	Percent	Year	Percent
1946	58.1	1952	71.1
1947	60.8	1953	70.6
1948	67.5	1954	72.3
1949	70.0	1955	74.0
1950	71.8	1956	72.0
1951	70.0	1958	73.0

Costs should be attacked with a plan. The best defense is a strong offense. The best offensive methods are knowledge, records, budget planning and action.

Efficiency is a must. Efficiency is the relationship between inputs and outputs. There is a huge demand for food in this country and people are willing to buy what they want if the price is right. This means there is opportunity for the efficient producer. We have to have a farm unit that is basically large enough. From this point, low-cost production or efficiency tells the story of the battle.

Cutting Crop Costs

Here are practices that help reduce crop costs. Check those you are using.

Soil fertility—Soil fertility is a part of lowering crop production costs, both unit and actual. This is the one expense item that, in general, you don't want to cut down on. Proper fertilization is essential to low-cost production of most crops. However, there are some things to consider in getting the most out of the fertilizer dollar. Check this list. How many of your group use these practices?

( ) 1. Test the soil.
( ) 2. Use only the fertilizer plant foods needed.
( ) 3. Fertilize for high average yields that will make highest returns per dollar invested where capital is limited.
( ) 4. Use fertilizer on crops where there is least risk and highest returns.
( ) 5. Where lime is needed, do you give it a high priority? (Lime is essential for high economical production.)
( ) 6. Use legumes to produce some of nitrogen needs.
( ) 7. Make use of manure to reduce amount commercial fertilizer needed.
( ) 8. Use extra nitrogen for increased yields by top-dressing crops.
( ) 9. Make use of high-analysis fertilizers to reduce cost per pound of plant food.
( ) 10. Use bulk fertilizer to save labor and reduce cost of plant food.

( ) 11. Spread cost of basic soil treatment over several years, rather than using operating money to finance it.

( ) 12. Basic soil treatments, lime, rock phosphate and potash should be applied as fast as finances permit. (Should be financed over a several-year period, however, not usually with operating 1-year money.)

Cropping System and Practices

( ) 1. Use available cropland for highest profit crops.

( ) 2. Use crops and combination of crops that will produce the most returns per acre in value, in corn equivalent, and hay equivalent at the lowest cost.

( ) 3. We use short crop rotations. With fertilization, long rotations are less essential.

( ) 4. We use the best tillage methods.

( ) 5. Use recommended varieties that are available locally. (Returns can be higher as other costs are fixed.)

( ) 6. Plant recommended rates of given crop.

( ) 7. Use seed treatments and spray where and when needed.

( ) 8. Control weeds by sprays and good cultural practices.

( ) 9. When we reclaim a piece of unproductive land, we expect that it will be several years in paying back the cost of improvement.

( ) 10. When we rent land, first we figure what our costs of production and probable returns will be, before we sign the lease.

Soil improvement and erosion control are a part of cutting crop production costs.

( ) 1. Farm on the contour when needed. (No cost here and saves money.)

( ) 2. Terrace good cropland that is subject to erosion. (This permits growing higher income crops more frequently. Build terrace outlets first —go slow. Use ASC payments to help defray costs. Can be a saving on income tax. Don't use scarce operating capital. If credit is used, set up a 3- to 5-year loan. Actual out-of-pocket cost can be held to a minimum.)

( ) 3. Drainage and land leveling. Same as No. 2.

( ) 4. Feed over pastures (save

labor in hauling manure).

( ) 5. Pasture out crops and residues. (Reduces harvest expense.)

( ) 6. Don't burn straw, stalks.

( ) 7. Follow a good cropping system—one that is most profitable for your farm.

( ) 8. Use winter cover crop for organic matter and erosion control.

( ) 9. Know how to grow the crops that make up our cropping system.

( ) 10. Look for ways to save labor and money. Hog down corn, wheel-track planting, minimum tillage, more than one operation per trip.

Cutting Livestock Costs

On most farms, livestock is fitted to cropping systems. Livestock is used to sell grass, hay and feed grains; to sell labor and capital not needed for crops; to give balance to the farm business; to increase size of business and net profits.

What kind of crops can be produced? This may determine the livestock program. If a farm is adapted to grow grass, then select a type of enterprise using high percentage of grass. If most profitable crop is corn, select a type of livestock using a lot of grain.

Grass enterprises include beef cow-stocker calf; dairy cow; wintered, grazed and fed yearlings; wintered, grazed and fed calves; ewe flock.

Nongrass enterprises include winter and fatten heifer; plain steer; wintered steer calves; sow and 2 litters fed out; laying hens.

Here are some suggested practices to lower cost of livestock production:

Dairy:

a. High production—aim for 10,000 pounds milk/cow; 200,000 pounds milk/man; 2,000 pounds milk/acre.

b. Make use of milk production records in culling, feeding and breeding program.

c. Breed cows for 12-month freshening interval.

d. Condition and feed dairy cows properly with 6- to 8-week rest.

e. Plan adequate pasture program. (Except in dry lot.)

f. Top-quality hay means more milk.

g. Silage is excellent winter roughage.

h. A healthy herd means higher production. Control mastitis, brucellosis and lepto.

Hogs:

a. High number pigs weaned/litter—aim for 8 or better.

b. Amount feed to produce 100 pounds pork—aim for 300-350 pounds feed.

c. Feed costs are the major costs in hog production—shop for

cheapest balanced ration.

d. Produce meat-type—the kind in demand.

e. Follow vaccination program to control disease losses.

Beef cattle (cow and calf):

a. High percent calf crop. Dropped — January, February, March.

b. Use of good-quality bull—preferably an animal whose rate of gain is well known.

c. Provide most of beef cows feed from pasture with a minimum of hay.

d. Provide protein and minerals to balance the pasture and hay.

e. Follow a culling and breeding program that will insure a good rates of gain on the calves.

f. Follow vaccination program to control brucellosis, lepto.

Poultry:

a. Grow pullets for laying house from tested strains, strain crosses, crossbreeds and hybrids.

b. Flocks consisting of current year's pullets should be kept separate from yearling hens that are kept for an additional 2-6 months of lay.

c. Purchase chicks at the time so they will be in production when your egg market has the best price.

d. High egg production is a result of feeding properly. The most efficient ration is one that makes use of farm grains and proper supplements added.

e. Labor efficiency can be increased by making use of feed rooms, automatic waterers, larger houses, built-up litter and egg room.

f. Low mortality rates are a must. Buying U. S. pullorum, typhoid-clean chicks, vaccinating for Newcastle, bronchitis and fowl pox; and debeaking.

g. Make use of artificial light to increase winter egg production.

h. Obtain the market for your eggs before going into poultry business.

Objets D'Paunch

In probing a bull's ailment, Vermont vets found in his innards: A set of gold bridgework, half an innertube, two plastic bags, nine pennies, a rubber doll, a toy wristwatch, a fishing spinner, five clothespins, six can lids, a 4-inch stack of bobby pins, 24 bottle caps, two earrings, two hypodermic needles, some small arms cartridge casings, two men's rubber heels, five coffee-can bands, one key chain, a broken pop bottle, some safety pins, a gold watch band, and 16 nails. He must have had an aesthetic desire to clean up the messy farmstead.

—Tractor Farming

How Much Is A Bushel?

Comments on a thought provoking question.

Condensed from Kansas Farmer

Raymond H. Gilkeson, Editor

CHANGING over to buying and selling grain on a hundredweight basis, rather than on the present bushel measurement, will be pushed more energetically than ever before in the months ahead.

The idea seems logical, sensible and economical. For example, it can eliminate perhaps a dozen costly conversions from bushels to hundredweights and back again in handling and processing grain. Reduced costs could mean more money to farmers who grow the grain. Also, it would make it easier to determine production and yields of grain, and simplify figuring the dockage in grain. When you dig into it a little, you find a "bushel" actually is an indefinite quantity.

Some interesting points on the subject are brought out in a talk by Hamill Varner, of Quaker Oats Company, and chairman of the committee for trading by weight of the American Feed Manufacturers Association, Chicago. He explained:

Theoretically and legally, the bushel is a precise unit of weight but there are exceptions. In certain states a bushel of buckwheat is 48 pounds, but it is 50 pounds in 10 states, 52 pounds in 8 states, 40 pounds in California, 56 pounds in Kentucky and 42 pounds in North Dakota.

Legally, a bushel of oats weighs 32 pounds. But if you were to weigh milling-quality oats from a cylinder containing 2,150.42 cubic inches, which is the Winchester bushel, you would get 38 or 40 pounds of oats. Here are minimum and maximum weights of bushels legalized by various state governments: barley, 32 to 50 pounds per bushel; buckwheat, 40-56; ear corn, 68-72; shelled corn, 52-56; cottonseed, 28-44; dried peaches, 28-40; rye, 54-56. There is a 56 per cent variation between the various states on the weight of a bushel of barley. Mr. Varner states that we need unification between

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states and the easiest way to get this would be to forget the bushel and trade on the basis of hundred-weight, which is not subject to differences between states; a hundred pounds is the same in every state.

In 1941, the National Conference on Weights and Measures established a committee to study the advantages and disadvantages of changing grain trading from bushels to hundredweight. Various committees have been studying the matter continuously for the last 18 years. The early findings have been confirmed year after year.

Advantages include: 1. Comparisons by farmers and traders of prices and relative feeding values of grains and feedstuffs could be kept on a uniform basis rather than on the widely varying bushel basis. 2. Conversion of quantities of grain from pounds to bushels and vice versa, could be eliminated, saving time and work and reducing errors.

Preliminary studies indicate that only 5 or 6 states designate bushels as the official unit of trade for grain. No change in federal law is required to permit grain trading in hundredweight.

Well, then, with all of these points in favor of the change, what is holding up the deal? That is where the disadvantages show up. Those cited are: adjustments required in the thinking habits and trading practices of men in the grain trade; in legislation; in forms and office procedures, and in historical data. However, with the 3 big farm organizations, the feed and grain trade, the National Association of State Departments of Agriculture and other organizations favoring the change, there appears to be no insurmountable obstacle to bringing it about.

The U. S. Department of Agriculture is again exchanging plant materials with Russia after a lapse of 15 years.

If you think that air conditioning is a product of the twentieth century, think for a moment of the humble honeybee. Approximately half of the bees in a hive stay inside beating their wings rapidly while the other half go out to gather pollen and nectar. Because of these beating wings, which make a loud hum that can be heard several feet away from the hive, the temperature inside the hive is about ten degrees cooler than outside. Yes, the bees rotate their duties, and those that cooled the hive one day may be honey gatherers the next day.

—*Sunshine Magazine*

A THOUGHT A DAY

TO KEEP THE PSYCHOANALYST AWAY

From the Collection of Everett Smith

If you are not afraid to face the music, you may get to lead the band some day.

★ ★ ★

To get anywhere, you'll have to strike out for somewhere, or you'll get nowhere.

★ ★ ★

Grandfather had a farm. His son has a garden. His grandson has a can opener.

★ ★ ★

The easiest person to deceive is one's own self.

★ ★ ★

A man who has committed a mistake and doesn't correct it, is committing another mistake.

★ ★ ★

A man has to live with himself so he should see to it that he always has good company.

★ ★ ★

A nation is not made great by the number of square miles it contains but by the number of square people it contains.

★ ★ ★

I know no such thing as genius; it is nothing but labor and diligence. *Hogarth.*

We have no more right to consume happiness without producing it than to consume wealth without producing it.

★ ★ ★

The average man is neither as clever as his wife thought he was when they were engaged, nor as much of a dud as she thinks he is now that they are married.

★ ★ ★

Nothing can be truly great which is not right.

★ ★ ★

A pessimist is one who makes difficulties of his opportunities; an optimist is one who makes opportunities of his difficulties.

★ ★ ★

The old believe everything, the middle-aged suspect everything, the young know everything.

Oscar Wilde.

★ ★ ★

Powerful indeed is the empire of habit.

★ ★ ★

Never try to reason the prejudice out of a man; it was not reasoned into him, and cannot be reasoned out.

It is the studying that you do after your school days that really counts. Otherwise you know only what everyone else knows.

★ ★ ★

You can't escape the responsibility of tomorrow by evading it today. *A. Lincoln.*

★ ★ ★

It is ill manners to silence a fool and cruelty to let him go. *Franklin.*

★ ★ ★

It is motive alone that gives character to the actions of men.

★ ★ ★

You give but little when you give of your possessions. It is when you give of yourself that you truly give.

★ ★ ★

To be of use in the world is the only way to be happy.

★ ★ ★

Every man must educate himself, his teachers and books are but helps; the work is his.

★ ★ ★

If we did but know how little some enjoy the great things they possess, there would not be much envy in the world.

★ ★ ★

The man who wakes up and finds himself a success, hasn't been asleep.

★ ★ ★

He that does good for good's sake and seeks neither praise nor reward, is sure of both in the end.

False friends are like our shadow, keeping close to us while we walk in the sun, leaving us when we move into the shade.

★ ★ ★

Life is 10% what you make it and 90% how you take it. *Irving Berlin.*

★ ★ ★

Experience is the name everyone gives to his mistakes.

★ ★ ★

Many a man in love with a dimple makes the mistake of marrying the whole girl.

★ ★ ★

Cherish all your happy moments, they make a fine cushion for old age.

★ ★ ★

The only way on earth to multiply happiness is to divide it.

★ ★ ★

The trouble with being punctual is that nobody's there to appreciate it.

★ ★ ★

The human brain is a wonderful thing. It starts working the moment you are born, and never stops until you stand up to speak in public.

★ ★ ★

Pray as if everything depended on God. Act as if everything depended on yourself.

★ ★ ★

Obstacles are those frightful things you see when you take your eye off the goal.

Shall We Destroy Farm Surpluses?

Less than 15 years ago the people of Europe were starving. Now they too, are confronted with agricultural surplus and the solution is no easier there than here . . .

Condensed from
Deutsche Landwirtschaftliche Presse

IN GERMANY, a recent news item tells how fruit and vegetable prices have sunk to catastrophic lows due, they believe, to excessive imports.

Is it really only the imports that are causing this trouble? How far can the Government (German) actually help agriculture in permanently solving the price and marketing problems? Should we not seek other ways?

Certainly fruit and vegetable farmers have a right to be embittered. Some prices have sunk to such low levels that they won't even pay harvesting costs. However, in stores in town, one can hardly find the low prices one would expect, and which would increase consumption. Evidently, city-dwellers don't benefit from the cheap and excessive market offerings by farmers. This is a doubly disappointing realization.

Do very low prices really encourage sales or do they hinder them? One business man says, "The customer is sceptical when price of a commodity is very low. Often he puts price and quality together. It does not matter if his refusal of the cheap commodity rests solely on deficient knowledge. So-called "conspicuous consumption" is widespread — people feel they can afford the best. On the other hand, one can increase sales now and then by offering special bargains if these are designated as such. However prices cannot become too cheap — or it will arouse the buyer's suspicions."

With its high fixed costs, retail business is not interested in selling large quantities at low unit profit. It would rather sell small quantities at high profits. Agriculture would also fare better

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Deutsche Landwirtschaftliche Presse, Spitalerstrasse 12, Hamburg 1, Germany

with a small harvest which can be handled by relatively little work rather than a higher total yield which causes price drops.

How can we keep part of the production off the market, especially that part which is low in quality and which is the first to bring on the price decline. Should surpluses which cannot be disposed of at fair prices be destroyed? This is an important question which should be considered from many angles. When we consider that low prices, poor quality and market disturbances are all connected together, then there is only one answer — yes.

Sheep's feet should be trimmed twice a year, in the spring and fall. Be sure to trim enough in the center of the foot so the heels or toes do not rub together.

Other countries are much more liberal with throwing away. In Holland, for example, vegetables are destroyed if the price drops below a certain level. On the other hand, it is possible there to spread the loss over all those who raise a certain crop. In our country, apples and plums spoil when they can't be sold or given away to charitable institutions. Wouldn't it be more practical not to harvest these at all before prices fall into the bottomless pit.

Why isn't it practical to instruct both producer and consumer on market and price developments? Then supply and demand would not be so far apart. Communications today connect entire continents in a matter of seconds, but when no more apples can be sold in Hamburg, farmers right on the outskirts of the city continue to pick apples. In the meantime, the consumers are buying the three times more expensive imported Italian apples. The import duties do not affect this at all, because the consumer also likes expensive imported grapes better than local applies.

The disposal of large quantities which glut the market should be made easier by suitable advertising, but in today's loud and competitive advertising one can only make an impression with a loud bang. This requires ideas, organizational talent, and above all money. Who is to get this sort of thing started?

Even if the opponents of proposed market regulations don't like it, we will have to have a certain amount of order through self-help, since the present continuous market disturbances deteriorate the position of agriculture without doing any good for other segments of the economy. The initiative must come from agriculture and its organizations.

How To Figure Winter Feed Needs

Take stock now to save money . . . and trouble later . . .

Condensed from The Dakota Farmer

A FARMER we know says a pencil and paper are just about the most important pieces of equipment he uses in planning his winter feeding operations.

"I used to guess at how much I had, but not any more. I really try to take stock of all my supplies in actual bushels and tons."

This stockman, and most successful livestock operators, agree that the starting point is to decide beforehand how you intend to carry cattle through the winter. This may involve selling or buying stock to fit the numbers to the feed supply, or it could be deciding how to stretch or supplement the feed on hand to maintain the cattle you want to winter.

The troubles and disappointments attending distress selling or paying inflated prices for feed when the winter's supply runs out before the spring pasture season begins are too well known to need lengthy comment.

Take stock of your hay supply —both as to quality and quantity now. Lay plans for supplying some alfalfa hay or supplement, particularly if native hay is below average quality. Decide whether the aim is to put on some gain during winter or to carry them through only, with a longer time required to put on market flesh next summer.

How much feed is needed during the average feeding season? The following can serve as a guide, but don't figure too close. Try to allow a little extra in case the winter is less open or more severe than normal.

Feeding For Gain:

For dry-lot feeding of yearlings for 180 days, count on half a ton of hay per head as about the minimum needed. Add 2,400 pounds of grain per yearling if the roughage is half legume; count on about 2,250 pounds of grain and 225 pounds of 41% protein supplement if the hay is of the native variety.

Calves on 210 days of feed require a similar amount of rough-

Reprinted by permission from
The Dakota Farmer, 1216 South Main Street, Aberdeen, South Dakota

age. If the hay is half legume, add 2,700 pounds of grain per head and 150 pounds of supplement; with native hay, it's advisable to have 2,600 pounds of grain and 350 pounds of supplement per calf.

Each two-year-old on 120 days of feed will require two-thirds of a ton of hay or its equivalent. Add 1,900 pounds of grain if the hay includes legumes; figure 1,800 pounds of grain and 150 pounds of supplement with native hay.

If Wintering Only:

A beef cow can get along very well for 180 days on a ton and a half of hay; however, if it's native hay, she'll probably also require about 100 pounds of supplement.

A beef yearling will go through 180 days on a ton and a quarter of leguminous hay. With native hay, however, plan on a quarter of a ton more, plus 160 pounds of supplement.

A ton of hay will suffice a calf over 180 days, but it should have, also, around 180 pounds of grain. Add 180 pounds of supplement to native hay.

Generally speaking, in wintering beef cattle every animal needs a ration which is balanced as to kind and amount of nutrients, and which also is sufficiently bulky to satisfy its appetite reasonably well. The beef animal should receive enough bulk so that the total dry feed consumed will amount to about 2% of its live weight.

Stretching The Supply:

Producers facing a shortage of feed for wintering their beef cows in most instances get by if 20 to 22 pounds of good-quality prairie hay is fed daily. The digestible protein of this hay should run at least 3½ to 4%.

If the hay is only fair in quality, then three to five pounds of alfalfa hay is fed by many successful cattlemen to replace three to five pounds of the prairie hay. If alfalfa is not available, one pound of high-protein supplement has about the same protein content as four to five pounds of alfalfa hay. One pound a day will furnish the greater portion of the protein required. However, the amount of hay fed should be kept at the 20- to 22-pound level.

In figuring all beef rations, it is customary to estimate roughage in "dry weight." If silage is fed, figure on three pounds of silage to replace one pound of dry hay. Feeding a small amount of legume hay will help meet protein requirements when utilizing corn silage.

Feed For Sheep:

Rams or pregnant ewes usually should have 750 to 800 pounds of hay and 30 pounds of grain each over 210 days on feed. If it's native hay, add 10 pounds of protein supplement. Fattening lambs,

in the dry lot for 100 days, require about 160 pounds of half-legume hay and 160 pounds of grain per head. If native hay is fed, increase the volume a bit and add 15 pounds of supplement.

Have you ever figured out the total feed requirement of a sow or gilt from pregnancy until drying up? A table recently compiled by the North Dakota Agricultural College offers some valuable hints.

Under average feeding conditions, the sow or gilt will eat 630 pounds of grain, 55 pounds of protein supplement, and 115 pounds of alfalfa hay during her 114-day pregnancy period. Add another 460 pounds of grain, 40 pounds of supplement, and 50 pounds of hay during the six-weeks lactation period, and another 88 pounds of grain and 7½ pounds of supplement during the 12 days she is drying up.

Emergency Feeds:

All through the preceding feed estimates, the amounts given are about the minimum you will want to supply under average feeding conditions. In emergency situations, of course, the wintering rations may have to be reduced.

Cobs, stalks, and cereal straw, all are low-quality roughage, but they can help to satisfy the beef animal's need for bulk. A small amount of molasses may be used to increase palatability and to increase feed value. Five to eight pounds of alfalfa hay should be fed additionally, however, or if the legume is not available, grain or protein supplement would help make up the protein deficiency.

Also, under emergency feeding conditions do not neglect the animals' mineral and vitamin needs; they likely will be greater then than in an average situation.

Organic Matter in Soil Aids Fertility

Maintaining soil organic matter content at its highest feasible level helps maintain soil fertility and may mean higher crop yields.

Soils specialists say in addition to conserving plant nutrients and moisture, organic matter aids in improving the physical growth condition of soil which may be reflected in increased plant growth. As the percentage of organic matter in soils increases, the exchange capacity, water-holding capacity and physical condition are improved and leaching losses of plant nutrients are reduced.

University of Florida

Love Of The Land Built The King Ranch

85,000 cattle on a million acres of land.

Condensed from
Western Livestock Journal

Fred Sandercock

THE King Ranch in southern Texas is a striking demonstartion of "love of the land" and long-range planning.

Three generations of intelligent, courageous, aggressive, hard working men have taken a million acres of difficult, unattractive land with very limited crop adaptability and are making it pay a profit by grazing cattle and horses on improved grasses and clovers. Ten acres of this improved land is carrying one cow.

The ranch owns 85,000 purebred and grade cattle and sells about 20,000 head a year. There are 500 Thoroughbred horses, including more than 100 head of brood mares. Twelve hundred head of Quarter Horses provide the ranch with saddle stock.

The King Ranch also has finishing pastures for cattle in Pennsylvania, a horse ranch in Kentucky and cattle ranches in the Argentine, Brazil, Australia and Cuba. Purebred Santa Gertrudis cattle and Quarter Horses have been sent to all of these foreign ranches.

Difficulties

It is difficult for the average stockman to visualize the difficulties of the southern Texas cattleman. Screw-worms, a 12-month menace, make it necessary to carefully inspect every animal at frequent intervals. Thick brush and mesquite trees must be cleared before profitable grazing. While rainfall is 26 inches, summer temperature is terrific. Frequent drouths are so severe that mature mesquite dies from lack of moisture. At such times on other ranches, cattle on unimproved acreage are eating the native cactus — prickly pear. Even though the spines of this cactus may be burned by torch, the lips, head and neck of cattle resemble a porcupine and festering sores are a constant invitation for the

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Western Livestock Journal, 4511 Produce Plaza, Los Angeles 58, California

ever-present screwworms.

Burning or spraying with chemicals to destroy the brush and cactus has proven unsatisfactory and is not generally practiced.

Brush Removal

By removing the inside track on each D8 and welding the two tractors together, then adding a dozer blade in front and a heavy horizontal subsoiling knife in the rear, King Ranch is able to knock down trees, brush and cactus and cut the roots in one operation. By this method there is minimum disturbance of the surface sod. A grass seeder is part of the rear equipment.

Only proven strains of grasses and clovers that have thrived in the severe climate and survived heavy grazing are used for seeding the cleared land.

The tractors have a ground clearance of 3 ft., allowing the installation of two angle blades which clear the ground but pick up the brush knocked down by the dozer bar and left in a window. This brush is not burned but left to decay, adding needed humus to the soil and protecting grass seedlings from over-grazing while they are getting established. Four acres an hour are cleared and seeded by this method.

Two Outfits

The ranch has two of these implements and several similarly equipped single tractors for spot clearing. The first double unit built has travelled 40,000 miles. A 100-ft. strip along the pasture borders is left for cattle shade and wildlife shelter.

Water for livestock is secured from wells 200 to 800 ft. deep. Pumps are operated by 350 windmills. Water is pumped into cement storage tanks and distributed to cement troughs in three adjoining pastures. Most pastures contain 800 to 1,000 acres. It's flat country but earthen tanks are used where practical. Water development is planned so that livestock do not have to travel more than a mile for water.

A ready hand is better than a ready tongue.

Two thousand miles of 56inch high woven wire fencing with 12-inch mesh is standard. It is purchased in carload lots direct from the manufacturer and made to King Ranch specifications. Cedar posts 8 ft. long and 8 inches in diameter are used.

Method

Fencing is placed on the inside of the posts. Three ¼-inch holes are bored through each post. Galvanized wire is looped over the top, middle and bottom horizontal wires of the fence and run through each hole, then brought

back on each side of the post and wrapped around the same wire. Staples are not used and there is no barbed wire on the ranch. Many fenced pastures allow the management to protect new seedings and rotate the grazing of mature pastures.

King Ranch does no farming, although it has more than 10,000 acres of some of the best black loam soil in southern Texas. Livestock live on grass the year round except the Thoroughbred weanlings, which get supplemental feeding. Thoroughbred colts in preliminary training get hay and grain. These youngsters are gentled and mannered at the ranch on a regulation mile track. They are then sent to the ranch in Kentucky to complete their training. Kentucky Thoroughbred foals are sent to the Texas ranch as weanlings for growth and development.

Quarter Horses

Quarter Horses are pasture bred. Forty mares are placed with a proven stallion in one pasture. Accurate records of colts are kept by small brands on the gaskins.

All mares and stallions work cattle before being placed in the breeding herd. In addition to conformation, both mares and stallions must be of quiet disposition and show cattle sense. The Quarter Horses all trace to Old Sorrel, with occasional outcrosses through registered mares. Twenty-five head of 10 to 13-month-old fillies and colts averaged almost $4,000 in the 1960 spring sale, indicating a liking for this breeding. These yearlings sold into many states, including Hawaii and Canada. There were two bays, one black and 22 sorrels.

The Santa Gertrudis are long, deep, thick and mellow, with plenty of bone and legs that allow them to travel any kind of range. They finish at almost any age and apparently never stop growing. Six head of 3 and 4-year-old steers in the feedlot are estimated to weigh 1,800 to 1,900 lb. These "Paul Bunyans" are used for ranch meat.

Santa Gertrudis Beef

Dr. J. K. Northway, chief King Ranch veterinarian for many years, claims that steaks can be cut with a fork and is the finest beef he has ever tasted. These red cattle are very popular in Texas. As their numbers increase and average quality improves, lower sale prices will make it possible for smaller operators to buy these good doing cattle wherever beef cattle are grown.

In travelling over a part of this great ranch, it is very apparent the management has looked and planned for many years in advance and that all of them had the real "love of the land."

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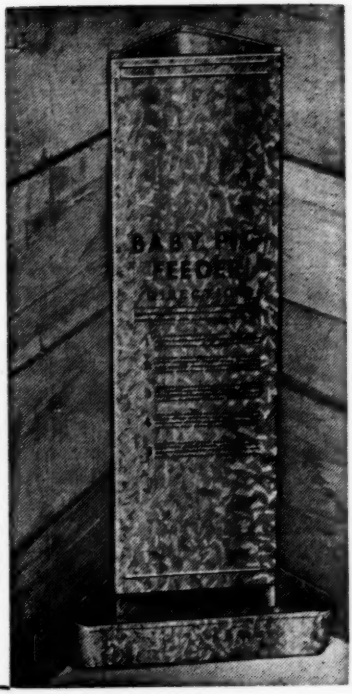

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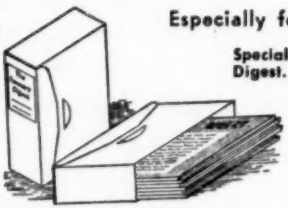

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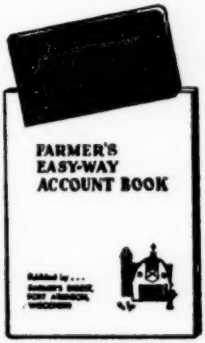

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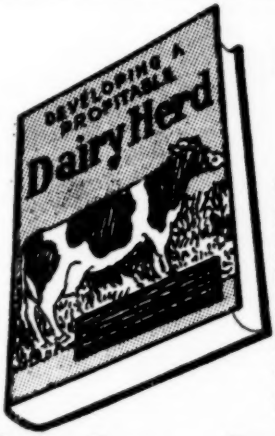

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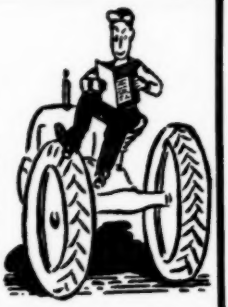

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